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The Mamasani Archaeological Project
Stage One

A report on the first two seasons of the ICAR - University of Sydney expedition to the Mamasani District, Fars Province, Iran

by

Members of the Mamasani Archaeological Project Team

Edited by

D.T. Potts, K. Roustaei, C.A. Petrie and L.R. Weeks

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Cover Illustration: Painted scorpion motif from the Bakun period at Tol-e Nurabad

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Contents

Preface and acknowledgements to the 1st edition *viii*
Preface and acknowledgements to the 2nd edition *ix*

Chapter 1. The Mamasani District and the Archaeology of Southwestern Iran 1
D.T. Potts, K. Roustaei, L.R. Weeks and C.A. Petrie
- **1.1. Archaeology in Southwestern Iran** 1
- **1.2. Previous Research in Mamasani** 3
- **1.3. The Mamasani Archaeological Project: Methodology and Research Orientations** 5
- **1.4. The Relative and Absolute Chronology of Fars** 6
- **1.5. Summary and Outline of Chapters** 13

Chapter 2. Landscape and Environment in Mamasani 17
K. Roustaei, A. Alamdari and C.A. Petrie
- **2.1. Physical Geography of the Southwestern Zagros and the Mamasani District** 17
  - **2.1.1. Geology** 17
  - **2.1.2. Climate** 18
  - **2.1.3. Vegetation** 19
  - **2.1.4. Geomorphology and Hydrology of Mamasani** 20
- **2.2. Human Geography in the Mamasani District** 24
  - **2.2.1. Modern Settlement** 24
  - **2.2.2. Modern Sedentary Land-use** 25
  - **2.2.3. Modern Nomadic Land-use** 26
- **2.3. The Plains of Mamasani in Context** 26

Chapter 3. Excavations at Tol-e Nurabad 31
L.R. Weeks, K.S. Alizadeh, L. Niakan, K. Alamdari (Trench A)
A. Khosrowzadeh and M. Zeidi (Trench B)
- **3.1. Site Description and Surroundings** 31
- **3.2. Stratigraphy, Phasing, and Architecture of Tol-e Nurabad** 31
  - **3.2.1. Excavation Methodology** 31
  - **3.2.2. Stratigraphic Phasing Methodology** 32
  - **3.2.3. Trench A Phase Descriptions** 32
  - **3.2.4. Trench B Phase Descriptions** 38
- **3.3. Ceramics from Tol-e Nurabad** 40
  - **3.3.1. Introduction and Definition of Terminology** 40
  - **3.3.2. Trench A Pottery Descriptions by Phase** 41
  - **3.3.3. Trench B Pottery Descriptions by Phase** 58
  - **3.3.4. Surface collections from Tol-e Nurabad** 62
- **3.4. Chipped Stone from Tol-e Nurabad** 63
  - **3.4.1. Trench A Chipped Stone** 63
  - **3.4.2. Trench B Chipped Stone** 63
- **3.5. Small finds from Tol-e Nurabad** 64
  - **3.5.1. Trench A Smallfinds** 64
  - **3.5.2. Trench B Smallfinds** 67
- **3.6. Faunal and Botanical Samples from Tol-e Nurabad** 67
- **3.7. Radiocarbon Dates from Tol-e Nurabad** 67
- **3.8. Summary of Excavations at Tol-e Nurabad** 70
  - **3.8.1. Occupational Phases at Tol-e Nurabad** 71
  - **3.8.2. Ceramic Assemblages at Tol-e Nurabad** 73
  - **3.8.3. Conclusions** 78

Chapter 4. Excavations at Tol-e Spid 89
C.A. Petrie, A. Asgari-Chaverdi and M. Seyedin
- **4.1. Description of Site and Surroundings** 89
- **4.2. Stratigraphy, Phasing and Architecture of Tol-e Spid** 90
  - **4.2.1. Excavation Methodology** 90
  - **4.2.2. Stratigraphic Phasing** 91
  - **4.2.3. Stratigraphic Phase Descriptions** 93
- **4.3. TS Ceramics** 99
  - **4.3.1. Introduction and Definition of Terminology** 99
  - **4.3.2. Description of Wares, Shapes and Decoration by Phase** 101
- **4.4. TS Smallfinds** 121
- **4.5. TS Faunal and Botanical Samples** 123
- **4.6. TS Radiocarbon Dates** 124
- **4.7. Summary of Excavations at Tol-e Spid** 126
  - **4.7.1. Occupational Phases at Tol-e Spid** 126
  - **4.7.2. Ceramic Assemblages at Tol-e Spid** 128
  - **4.7.3. Conclusions** 132

Chapter 5. Faunal Remains from Tol-e Nurabad and Tol-e Spid 135
M. Mashkour
- **5.1. Zooarchaeology in Fars and Mamasani** 135
- **5.2. Global Remarks and Sample Validation of the three Faunal Assemblages** 135
- **5.3. Faunal Spectra** 136
- **5.4. Discussion** 138
- **Appendix – Rodent Remains (N. Hashemi)** 145

Chapter 6. Survey of Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do 147
M. Zeidi, B. McCall and A. Khosrowzadeh
- **6.1. Introduction and Background** 147
- **6.2. Survey Methodology** 148
- **6.3. The Results of the Survey** 149
  - **6.3.1. Settlement periods within Dasht-e Rostam-e Yek and Do** 150
  - **6.3.2. Summary of Survey Results** 157
- **6.4. Site Gazetteer** 159

Chapter 7. Perspectives on the Cultural Sequence of Mamasani 169
C.A. Petrie, L.R. Weeks, D.T. Potts and K. Roustaei
- **7.1. The Mamasani Archaeological Project Stage One** 169
  - **7.1.1. Pre-6th Millennium BC Mamasani** 170
  - **7.1.2. Mamasani in the 6th Millennium BC** 170
  - **7.1.3. Mamasani in the 5th Millennium BC** 171
  - **7.1.4. Mamasani in the 4th Millennium BC** 173
  - **7.1.5. Mamasani in the 3rd Millennium BC** 177
  - **7.1.6. Mamasani in the 2nd millennium BC** 178
  - **7.1.7. Mamasani in the 1st Millennium BC** 180
  - **7.1.8. Mamasani AD** 182
- **7.2. Future Directions – The Mamasani Archaeological Project Stage Two** 183

Bibliography 197

Plate 1. Location of Tol-e Nurabad, Tol-e Spid and other major sites in Mamasani 213
Plate 2. Dasht-e Nurabad 214
Plate 3. Dasht-e Rustam-e Yek 215
Plate 4. Dasht-e Rustam-e Do 216
Plate 5. Section of Tol-e Nurabad Sounding 217
Plate 6. Tol-e Nurabad Trench A Neolithic Pottery 218
Plate 7. Tol-e Nurabad Trench A Neolithic Pottery 219
Plate 8. Tol-e Nurabad Trench A Neolithic Pottery 220
Plate 9. Tol-e Nurabad Trench A Neolithic and Bronze Age Pottery 221
Plate 10. Tol-e Nurabad Trench A Bronze Age Pottery 222
Plate 11. Section of Tol-e Nurabad Trench B Sounding 223
Plate 12. Section of Tol-e Spid Sounding 224
Plate 13. Tol-e Spid Selected Ceramic Images 225
Plate 14. Tol-e Spid Selected Ceramic Images 226
Plate 15. Tol-e Spid Selected Ceramic Images 227
Plate 16. Site Distribution within Mamasani Survey Area 228

Figure 1.1. Map of southern Iran, Iraq and the Persian Gulf, showing the locations of major prehistoric and early historic period sites and regions 229
Figure 1.2. Map of southwestern Iran showing the route of the survey undertaken in November 2002 and the location of Mamasani 230
Figure 1.3. Relative Chronology for Fars and correlation with Susiana 231

Figure 2.1. View to south showing location of Korr-e Sangān and the course of its stream as it flows towards Tol-e Nurabad 232
Figure 2.2. View to north from Tol-e Nurabad towards Baj Gur, showing course of Korr-e Sangān 232
Figure 2.3. View to north showing Rud-e Fahliyan from Kurangun ridge 233
Figure 2.4. View to west showing location of Cheshme Gurab and course of its stream as it flows towards MS36 and Tol-e Spid 233
Figure 2.5. Alluvial fan covering the northern part of Dasht-e Rustam-e Yek 234
Figure 2.6. View to southwest showing the modern Pol-e Pirim and the Tang-e Shiv 235
Figure 2.7. View to northwest showing Chehel Cheshme and overlying karst geology 235
Figure 2.8. Location of primary hydrological features on Dasht-e Rustam-e Do 236
Figure 2.9. View to south overlooking Sarab Siah and showing MS20, MS11 and area of lake/lagoon 237
Figure 2.10. View to northeast looking towards Dasht-e Rostam-e Do, showing Pol-e Pirim 237
Figure 2.11. View to northwest showing Yagheh Sangār from Tol-e Spid 238
Figure 2.12. View to east showing Valley of Buvān from Tol-e Nurabad 238

Figure 3.1. Tol-e Nurabad seen from the north-east 239
Figure 3.2. Tol-e Nurabad, perspective looking from the east 239
Figure 3.3. Topographic Plan of Tol-e Nurabad 240
Figure 3.4. The Korr-e Sangan stream to the north of Tol-e Nurabad 240
Figure 3.5. Tol-e Nurabad seen from the north-west 241
Figure 3.6. The location of Trenches A and B at the northern end of the main mound 241
Figure 3.7. Scaffolding for Trench A 241
Figure 3.8. Tol-e Nurabad Trench A excavated loci and stratigraphic phasing 242
Figure 3.9. Tol-e Nurabad Trench A stratigraphic sections 243
Figure 3.10. Tol-e Nurabad Trench A phased sections 244
Figure 3.11. Trench A Phase A27 fireplace, in plan 245
Figure 3.12. Trench A Phase A26 wall, in plan (left, scale 1:20), and as photographed (right) 245
Figure 3.13. Trench A Phases A25-A27 in east section 245
Figure 3.14. Trench A Phase A25 wall in south section 245
Figure 3.15. Trench A Phase A24b wall, from above 246
Figure 3.16. Trench A Phase A24b eastern wall and associated fill, from above 246
Figure 3.17. Trench A Phase A24 walls, in plan 246
Figure 3.18. Trench A Phase A24b, detail of fill associated with western wall (Locus 158), view from north 247
Figure 3.19. Trench A Phase A24b, fill associated with western wall, as seen in south section 247
Figure 3.20. Trench A Phase A24a, wall and associated fill, prior to excavation 248
Figure 3.21. Trench A Phase A24a, wall (Locus 152) and associated deposits, in plan 248
Figure 3.22. Trench A Phase A23 (Locus 146), detail of fill 249
Figure 3.23. Trench A Phase A22 wall (Locus 140) and associated deposits, in plan 249
Figure 3.24. Trench A Phase A21 walls, looking south 250
Figure 3.25. Trench A Phase A21 wall (Locus 129), in plan 250

Figure 3.26. Trench A Phase A21, pit (Locus 136), below hearth structure 250
Figure 3.27. Trench A Phase A20 hearth, as seen in south and west sections 251
Figure 3.28. Trench A Phase A20 hearth in plan 251
Figure 3.29. Trench A Phase A20 hearth during excavation of Locus 117 (left) and Locus 120 (right) 251
Figure 3.30. Trench A Phase A19, fireplace (Locus 117), looking south 252
Figure 3.31. Trench A Phase A19, fireplace (Locus 117), in plan 252
Figure 3.32. Trench A Phase A16, fireplace (Locus 103), in plan 252
Figure 3.33. Trench A Phase A13 and Phase A14, as seen in south section 253
Figure 3.34. Trench A Phase A12b wall, in plan 253
Figure 3.35. Trench A Phase A8 floor levels, as seen in west section 254
Figure 3.36. Trench A Phase A7 river cobbles (loci 40-42), in plan 254
Figure 3.37. The sloping river cobble layer of Phase A7, as visible in the northern section of Tol-e Nurabad 254
Figure 3.38. Trench A Phase A4 clay lined furnace with channel at western edge, from above 255
Figure 3.39. Trench A Phase A4 lower furnace (Locus 31) with channel, in section 255
Figure 3.40. Trench A Phase A4, rebuilt upper furnace floors (loci 26-28), in section 255
Figure 3.41. Trench A Phase A4, Locus 29 in plan 256
Figure 3.42. Trench A Phase A4 (Locus 29). Boulders in furnace foundation pit 256
Figure 3.43. Tol-e Nurabad Trench B excavated loci and stratigraphic phasing 257
Figure 3.44. Tol-e Nurabad Trench B phased section 258
Figure 3.45. Tol-e Nurabad Trench B Phase B9, view from top of trench 259
Figure 3.46. Tol-e Nurabad Trench B Phase B9, mudbrick structure, view from above 259
Figure 3.47. Tol-e Nurabad Trench B Phase B9, plan of mudbrick structure 259
Figure 3.48. Tol-e Nurabad Trench B Phase B8, view of structures 260
Figure 3.49. Tol-e Nurabad Trench B Phase B8, plan of structure and features 260
Figure 3.50. Tol-e Nurabad Trench B Phase B7b, view of occupation surface from above 261
Figure 3.51. Tol-e Nurabad Trench B Phase B7b, detail of ceramic vessel smashed on surface 261
Figure 3.52. Tol-e Nurabad Trench B Phase B6, view of structure and features from above 262
Figure 3.53. Tol-e Nurabad Trench B Phase B6, plan of structure (Locus 329) and feature (Locus 330) 262
Figure 3.54. Tol-e Nurabad Trench B Phase B5b, plan pebble feature (Locus 326) 263
Figure 3.55. Tol-e Nurabad Trench B Phase B5b, view of pebble feature 263
Figure 3.56. Tol-e Nurabad Trench B Phase B4, view of mudbrick wall from above 264
Figure 3.57. Tol-e Nurabad Trench B Phase B4, plan mudbrick wall 264
Figure 3.58. Tol-e Nurabad Trench B Phase B3, view of feature (Locus 312) 265
Figure 3.59. Tol-e Nurabad Trench B Phase B3, plan feature (Locus 312) 265
Figure 3.60. Tol-e Nurabad Trench B Phase B3, view of pebble feature 266
Figure 3.61. Tol-e Nurabad Trench B Phase B3, plan pebble feature (Locus 307) 266
Figure 3.62. Tol-e Nurabad Trench B Phase B2, view of massive mudbrick structure from above 267
Figure 3.63. Tol-e Nurabad Trench B Phase B2, plan of massive mudbrick structure 267
Figure 3.64. Tol-e Nurabad Trench A Phase A27 pottery 269
Figure 3.65. Tol-e Nurabad Trench A Phase A26-27 pottery 269
Figure 3.66. Tol-e Nurabad Trench A Phase A26 pottery 271
Figure 3.67. Tol-e Nurabad Trench A Phase A25 pottery 273
Figure 3.68. Tol-e Nurabad Trench A Phase A24b-25 pottery 275
Figure 3.69. Tol-e Nurabad Trench A Phase A24b pottery. Rim Sherds 277
Figure 3.70. Tol-e Nurabad Trench A Phase A24b pottery. Body sherds 279
Figure 3.71. Tol-e Nurabad Trench A Phase A24b pottery 281
Figure 3.72. Tol-e Nurabad Trench A Phase A24a-24b pottery 281
Figure 3.73. Tol-e Nurabad Trench A Phase A24a pottery. Rim sherds 283
Figure 3.74. Tol-e Nurabad Trench A Phase A24a pottery. Body and base sherds 285
Figure 3.75. Tol-e Nurabad Trench A Phase A23 pottery 287
Figure 3.76. Tol-e Nurabad Trench A Phase A22-23 pottery 289
Figure 3.77. Tol-e Nurabad Trench A Phase A22 pottery 289
Figure 3.78. Tol-e Nurabad Trench A Phase A21 pottery 291
Figure 3.79. Tol-e Nurabad Trench A Phase A20 pottery 293
Figure 3.80. Tol-e Nurabad Trench A Phase A19 painted chaff-tempered pottery and sandy buff pottery 293
Figure 3.81. Tol-e Nurabad Trench A Phase A19 slipped and burnished chaff-tempered pottery 295
Figure 3.82. Tol-e Nurabad Trench A Phase A18 chaff-tempered pottery and buff ware bowls with interior decoration 297
Figure 3.83. Tol-e Nurabad Trench A Phase A18 pottery. Painted buff wares 299
Figure 3.84. Tol-e Nurabad Trench A Phase A18 pottery. Plain and painted buff wares 301
Figure 3.85. Tol-e Nurabad Trench A Phase A18 pottery. Large body sherds and bases 303
Figure 3.86. Tol-e Nurabad Trench A Phase A17 pottery. Plain and painted buff wares 305
Figure 3.87. Tol-e Nurabad Trench A Phase A17 buff ware pottery and red ware jar (TNP 1173) 307

Figure 3.88. Tol-e Nurabad Trench A Phase A16-17 pottery 309
Figure 3.89. Tol-e Nurabad Trench A Phase A16 pottery. Painted buff wares 311
Figure 3.90. Tol-e Nurabad Trench A Phase A16 pottery. Deep plain buff ware bowls 313
Figure 3.91. Tol-e Nurabad Trench A Phase A15-16 pottery. Plain and painted buff wares 315
Figure 3.92. Tol-e Nurabad Trench A Phase A15-16 pottery. Plain buff wares 317
Figure 3.93. Tol-e Nurabad Trench A Phase A15 pottery. Plain and painted buff wares 317
Figure 3.94. Tol-e Nurabad Trench A Phase A14-15 pottery. Plain and painted buff wares 319
Figure 3.95. Tol-e Nurabad Trench A Phase A14 pottery. Plain and painted buff wares 321
Figure 3.96. Tol-e Nurabad Trench A Phase A13-14 pottery. Buff wares and red slipped wares 321
Figure 3.97. Tol-e Nurabad Trench A Phase A13 pottery. Buff wares and red slipped wares 321
Figure 3.98. Tol-e Nurabad Trench A Phase A12b pottery. Buff ware and red-slipped ware 323
Figure 3.99. Tol-e Nurabad Trench A Phase A12a pottery. Buff ware, red-slipped and other ware types 323
Figure 3.100. Tol-e Nurabad Trench A Phase A11-12a pottery 325
Figure 3.101. Tol-e Nurabad Trench A Phase A11 pottery 325
Figure 3.102. Tol-e Nurabad Trench A Phase A10 pottery. Bevelled-rim bowls and fine (slipped and burnished) wares 327
Figure 3.103. Tol-e Nurabad Trench A Phase A10 pottery. Grit-tempered wares 329
Figure 3.104. Tol-e Nurabad Trench A Phase A10 pottery. Plain and painted buff wares 331
Figure 3.105. Tol-e Nurabad Trench A Phase A9 pottery 333
Figure 3.106. Tol-e Nurabad Trench A Phase A8 pottery 335
Figure 3.107. Tol-e Nurabad Trench A Phase A7 pottery 337
Figure 3.108. Tol-e Nurabad Trench A Phase A6 pottery 339
Figure 3.109. Tol-e Nurabad Trench A Phase A5 pottery. Grit-tempered ware 341
Figure 3.110. Tol-e Nurabad Trench A Phase A5 pottery. Vegetal-tempered wares, grit-tempered wares, and slipped and burnished wares 343
Figure 3.111. Tol-e Nurabad Trench A Phase A4 pottery 345
Figure 3.112. Tol-e Nurabad Trench A Phase A3 pottery 347
Figure 3.113. Tol-e Nurabad Trench A Phase A3 pottery. Closed forms and bases 349
Figure 3.114. Tol-e Nurabad Trench A Phase A2b pottery. Grit-tempered wares, slipped and burnished wares (middle), and plain vegetal-grit-tempered wares 351
Figure 3.115. Tol-e Nurabad Trench A Phase A2b pottery. Decorated vegetal(+grit)-tempered wares 353
Figure 3.116. Tol-e Nurabad Trench A Phase A2a pottery. Grit(+vegetal)-tempered wares 355
Figure 3.117. Tol-e Nurabad Trench A Phase A2a pottery. Grit-tempered wares and red-slipped wares 357
Figure 3.118. Tol-e Nurabad Trench A Phase A1-2a pottery 357
Figure 3.119. Tol-e Nurabad Trench A Phase A1 pottery. Grit-tempered wares and residual material 359
Figure 3.120. Tol-e Nurabad Trench A Phase A1 pottery. Vegetal(+grit)-tempered wares 361
Figure 3.121. Tol-e Nurabad Trench B Phase B9. Vegetal(+grit)-tempered ware 363
Figure 3.122. Tol-e Nurabad Trench B Phase B8. Vegetal(+grit)-tempered ware 365
Figure 3.123. Tol-e Nurabad Trench B Phase B8. Vegetal(+grit)-tempered ware 367
Figure 3.124. Tol-e Nurabad Trench B Phase B7b. Vegetal(+grit)-tempered ware 369
Figure 3.125. Tol-e Nurabad Trench B Phase B7b. Vegetal(+grit)-tempered ware 371
Figure 3.126. Tol-e Nurabad Trench B Phase B7b. Vegetal(+grit)-tempered ware 373
Figure 3.127. Tol-e Nurabad Trench B Phase B7b. Vegetal(+grit)-tempered ware 375
Figure 3.128. Tol-e Nurabad Trench B Phase B7b. Vegetal(+grit)-tempered ware 377
Figure 3.129. Tol-e Nurabad Trench B Phase B7a. Vegetal(+grit)-tempered ware 379
Figure 3.130. Tol-e Nurabad Trench B Phase B6. Vegetal(+grit)-tempered ware 379
Figure 3.131. Tol-e Nurabad Trench B Phase B5b. Vegetal(+grit)-tempered ware 381
Figure 3.132. Tol-e Nurabad Trench B Phase B5a. Vegetal(+grit)-tempered ware 383
Figure 3.133. Tol-e Nurabad Trench B Phase B4. Vegetal(+grit)-tempered ware 385
Figure 3.134. Tol-e Nurabad Trench B Phase B3-4. Vegetal(+grit)-tempered ware 387
Figure 3.135. Tol-e Nurabad Trench B Phase B3. Vegetal(+grit)-tempered ware 389
Figure 3.136. Tol-e Nurabad Trench B Phase B2 Ceramics 391
Figure 3.137. Tol-e Nurabad Trench B Phase B1. Vegetal(+grit)-tempered ware 391
Figure 3.138. Tol-e Nurabad Trench A Phase A27 pottery 392
Figure 3.139. Tol-e Nurabad Trench A Phase A26-27 pottery 393
Figure 3.140. Tol-e Nurabad Trench A Phase A26 pottery 394
Figure 3.141. Tol-e Nurabad Trench A Phase A26, vessel TNP 1778 395
Figure 3.142. Tol-e Nurabad Trench A Phase A25 pottery 396
Figure 3.143. Tol-e Nurabad Trench A Phase A24b-25 pottery 397
Figure 3.144. Tol-e Nurabad Trench A Phase A24b pottery 397
Figure 3.145. Tol-e Nurabad Trench A Phase A24b pottery 398
Figure 3.146. Tol-e Nurabad Trench A Phase A24b pottery 399
Figure 3.147. Tol-e Nurabad Trench A Phase A24a-24b pottery 400

Figure 3.148. Tol-e Nurabad Trench A Phase A24a pottery 401
Figure 3.149. Tol-e Nurabad Trench A Phase A23 pottery 402
Figure 3.150. Tol-e Nurabad Trench A Phase A22 pottery 403
Figure 3.151. Tol-e Nurabad Trench A Phase A21 pottery 404
Figure 3.152. Tol-e Nurabad Trench A Phase A20 pottery 405
Figure 3.153. Tol-e Nurabad Trench A Phase A20 pottery 406
Figure 3.154. Tol-e Nurabad Trench A Phase A19 pottery 407
Figure 3.155. Tol-e Nurabad Trench A Phase A18 pottery 408
Figure 3.156. Tol-e Nurabad Trench A Phase A18 pottery 409
Figure 3.157. Tol-e Nurabad Trench A Phase A18 pottery 410
Figure 3.158. Tol-e Nurabad Trench A Phase A17 pottery 411
Figure 3.159. Tol-e Nurabad Trench A Phase A17 pottery 412
Figure 3.160. Tol-e Nurabad Trench A Phase A16-17 pottery 413
Figure 3.161. Tol-e Nurabad Trench A Phase A16 pottery 414
Figure 3.162. Tol-e Nurabad Trench A Phase A16 pottery 415
Figure 3.163. Tol-e Nurabad Trench A Phase A15-16 pottery 416
Figure 3.164. Tol-e Nurabad Trench A Phase A15 pottery 417
Figure 3.165. Tol-e Nurabad Trench A Phase A14-15 pottery 417
Figure 3.166. Tol-e Nurabad Trench A Phase A14 pottery 418
Figure 3.167. Tol-e Nurabad Trench A Phase A13-14 pottery 418
Figure 3.168. Tol-e Nurabad Trench A Phase A13 pottery 419
Figure 3.169. Tol-e Nurabad Trench A Phase A12b pottery 420
Figure 3.170. Tol-e Nurabad Trench A Phase A12a pottery 421
Figure 3.171. Tol-e Nurabad Trench A Phase A11 pottery 422
Figure 3.172. Tol-e Nurabad Trench A Phase A10 pottery 423
Figure 3.173. Tol-e Nurabad Trench A Phase A10 pottery 424
Figure 3.174. Tol-e Nurabad Trench A Phase A9 pottery 425
Figure 3.175. Tol-e Nurabad Trench A Phase A8 pottery 426
Figure 3.176. Tol-e Nurabad Trench A Phase A7 pottery 426
Figure 3.177. Tol-e Nurabad Trench A Phase A6 pottery 427
Figure 3.178. Tol-e Nurabad Trench A Phase A5 pottery 428
Figure 3.179. Tol-e Nurabad Trench A Phase A4 pottery 429
Figure 3.180. Tol-e Nurabad Trench A Phase A4 pottery 430
Figure 3.181. Tol-e Nurabad Trench A Phase A3 pottery 431
Figure 3.182. Tol-e Nurabad Trench A Phase A2b pottery 432
Figure 3.183. Tol-e Nurabad Trench A Phase A2b pottery 433
Figure 3.184. Tol-e Nurabad Trench A Phase A2a pottery 434
Figure 3.185. Tol-e Nurabad Trench A Phase A1-2a pottery 435
Figure 3.186. Tol-e Nurabad Trench A Phase A1 pottery 435
Figure 3.187. Tol-e Nurabad surface pottery, Neolithic to Bronze Age 436
Figure 3.188. Tol-e Nurabad surface pottery, Bronze Age to Achaemenid 437
Figure 3.189. Tol-e Nurabad Trench A small finds, Phases A18-25 438
Figure 3.190. Tol-e Nurabad Trench A small finds, Phases A13 439
Figure 3.191. Tol-e Nurabad Trench A small finds, Phases A6-8 439
Figure 3.192. Tol-e Nurabad Trench A small finds, Phases A6-10 440
Figure 3.193. Tol-e Nurabad Trench A clay wall cone fragments 441
Figure 3.194. Tol-e Nurabad Trench A clay wall cone fragments 442
Figure 3.195. Tol-e Nurabad Trench A clay wall cone shaft fragments 443
Figure 3.196. Tol-e Nurabad Trench A Phase A3 door socket and grinding stone 444
Figure 3.197. Tol-e Nurabad Trench A Phase A3-5 small finds 445
Figure 3.198. Tol-e Nurabad Trench B small finds 446
Figure 3.199. Tol-e Nurabad Trench A. Calibrated radiocarbon dates 447
Figure 3.200. Tol-e Nurabad Trench A. Intervals between specific determinations 448

Figure 4.1. View of Tol-e Spid from the east showing evidence of modern disturbance and building activity 449
Figure 4.2. One metre interval contour plan of Tol-e Spid, with modern structures shown in grey 449
Figure 4.3. Digitally generated perspective view of Tol-e Spid from the east 450
Figure 4.4. One metre contour plan of Tol-e Spid showing location of sounding and modern building 450
Figure 4.5a. Photograph of Tol-e Spid in 1933 (after Harrison 1936: Plate 2.2), 4.5b. Brick Inscription from Tol-e Spid (after Herzfeld 1928: 83; 1968: §146) 451
Figure 4.6. Location of Tol-e Spid in relation to the course of the Rud-e Fahliyan 451
Figure 4.7. Location of Tol-e Spid in relation to nearby sites, alluvial fan, Cheshme Gurab and the Rud-e Fahliyan 452

Figure 4.8. Cheshme Gurab stream flowing towards Tol-e Spid 453
Figure 4.9. View from top of Tol-e Spid towards Jinjan and Kurangun, showing course of Rud-e Fahliyan 453
Figure 4.10. Section of Tol-e Spid Sounding 454
Figure 4.11. TS Sounding Harris matrix 455
Figure 4.12. Plan of the Phase 23 mudbrick structures and associated deposits 456
Figure 4.13. Plan of the Phase 22 stone and mud structure and associated deposit 456
Figure 4.14. Plan of the Phase 21 degraded mud structure and associated deposit 456
Figure 4.15. Plan of the Sub-Phase 20b mudbrick wall and associated deposits 457
Figure 4.16. Photo of the Sub-Phase 20c mudbrick wall 457
Figure 4.17. Plan of the Phase 19 disturbed stone structure 458
Figure 4.18. Photo of the Phase 19 disturbed stone wall 458
Figure 4.19. Photo of transitional Lapui/Banesh ceramic vessel (TS 1903) in situ - Phase 19 (Locus 3130) 459
Figure 4.20. Photo of Banesh goblet base (TS 1690) in situ - Phase 18a (Locus 3117) 459
Figure 4.21. Plan of Phase 18b disturbed stone wall, and position of earthquake split 460
Figure 4.22. Photo of Phase 18b disturbed stone wall 460
Figure 4.23. Plan of Sub-Phase 17a showing location of lined hearth (Locus 3098) and associated pit feature (Locus 3101) 461
Figure 4.24. Photo of lined hearth (Locus 3098) - Sub-Phase 17a 461
Figure 4.25. Plan of Phase 16b stone structure showing damage at eastern end 462
Figure 4.26. Photo of Phase 16b stone structure showing damage at eastern end 462
Figure 4.27. Plan of Sub-Phase 15c mudbrick structure (Locus 3091) and associated deposit 463
Figure 4.28. Photo of river stone foundation of Sub-Phase 15c wall (Locus 3093) 463
Figure 4.29. Photo of Sub-Phase 13c pebble pavement/fill (Locus 3076) 464
Figure 4.30. Photo of Sub-Phase 13b pit (Locus 3075) 464
Figure 4.31. Plan of Phase 12 mudbrick walls 465
Figure 4.32. Photo of Phase 12 mudbrick walls, looking to south 465
Figure 4.33. Plan of Phase 11 pebble pavement with sloping areas indicated 466
Figure 4.34. Photo of Phase 11 pebble pavement 466
Figure 4.35. Plan of Phase 10 mudbrick wall 467
Figure 4.36. Photo of Phase 10 mudbrick wall 467
Figure 4.37. Photo of burnt render on face of mudbrick wall - Phase 10 468
Figure 4.38. Plan of Phase 8 disturbed mudbrick wall 468
Figure 4.39. Plan of Phase 7 mudbrick wall and associated deposits 469
Figure 4.40. Photo of Phase 7 mudbrick wall 469
Figure 4.41. Plan of Phase 5 mudbrick structures and associated deposits 470
Figure 4.42. Photo of Phase 5 mudbrick structures and associated floor surface 470
Figure 4.43. Plan of Sub-Phase 4b structures 471
Figure 4.44. Plan of Sub-Phase 4a stone scatter 471
Figure 4.45. Photo of Sub-Phase 4a stone scatter 472
Figure 4.46. Photo of ceramic vessel (TS 134-137) in situ - Sub-Phase 4a (Locus 3015) 472
Figure 4.47. Photo of ceramic vessel (TS 56-70, 87-92) in situ - Phase 3 (Locus 3009) 472
Figure 4.48. Plan of Phase 3 mudbrick walls and associated deposits 473
Figure 4.49. Photo of Phase 3 mudbrick walls and associated surface deposits 473
Figure 4.50. Tol-e Spid Phase 24 Grit-Tempered and Residual Wares 475
Figure 4.51. Tol-e Spid Phase 23 Grit-Tempered, Bichrome and Residual Wares 477
Figure 4.52. Tol-e Spid Phase 22 Grit-Tempered Ware Bowl, Beaker and Jar Forms 479
Figure 4.53. Tol-e Spid Phase 22 Grit-Tempered Ware Jar and Hole-mouth Forms 481
Figure 4.54. Tol-e Spid Phase 22 Grit-Tempered, Fine and Residual Wares 483
Figure 4.55. Tol-e Spid Phase 21 Grit-Tempered Ware Bowl and Jar Forms 485
Figure 4.56. Tol-e Spid Phase 21 Grit-Tempered and Residual Buff Wares 487
Figure 4.57. Tol-e Spid Phase 20 Grit-Tempered Ware Jars 489
Figure 4.58. Tol-e Spid Phase 20 Fine Orange and Red-Slipped Ware Forms 491
Figure 4.59. Tol-e Spid Phase 19 Grit-Tempered Ware Jars 493
Figure 4.60. Tol-e Spid Phase 19 Fine Red-Slipped, Painted, Coarse Vegetal and Residual Ware Forms 495
Figure 4.61. Tol-e Spid Phase 18 Coarse Vegetal and Grit-Tempered Bevelled-Rim Bowls 497
Figure 4.62. Tol-e Spid Phase 18 Vegetal and Grit-Tempered Trays 499
Figure 4.63. Tol-e Spid Phase 18 Vegetal and Grit-Tempered Trays and Bowl and Grit Ware Forms 501
Figure 4.64. Tol-e Spid Phase 18 Grit-Tempered Ware Forms 503
Figure 4.65. Tol-e Spid Phase 18 Fine Red-Slipped Ware Forms 505
Figure 4.66. Tol-e Spid Phase 18 Fine Red-Slipped, Fine Orange Ware and Residual Ware Forms 507
Figure 4.67. Tol-e Spid Phase 17 Vegetal- and Vegetal and Grit-Tempered Ware Forms 509
Figure 4.68. Tol-e Spid Phase 17 Vegetal- and Vegetal and Grit-Tempered Ware Forms 511
Figure 4.69. Tol-e Spid Phase 17 Vegetal- and Vegetal and Grit-Tempered Ware Forms 513

Figure 4.70. Tol-e Spid Phase 17 Grit-Tempered Ware Forms 515
Figure 4.71. Tol-e Spid Phase 17 Grit-Tempered Ware Forms 517
Figure 4.72. Tol-e Spid Phase 17 Grey Grit-Tempered and Fine Red-Slipped Ware Forms 519
Figure 4.73. Tol-e Spid Phase 17 Buff/Orange and Residual Vegetal and Grit-Tempered Ware Forms 521
Figure 4.74. Tol-e Spid Phase 17 Residual Grit and Fine Buff Ware Forms 523
Figure 4.75. Tol-e Spid Phase 16 Vegetal- and Vegetal and Grit-Tempered Ware Forms 525
Figure 4.76. Tol-e Spid Phase 16 Grit and Grey Grit-Tempered Ware Forms 527
Figure 4.77. Tol-e Spid Phase 16 Fine Red Slip and Buff and Residual Grit and Vegetal Ware Forms 529
Figure 4.78. Tol-e Spid Phase 15 Vegetal- and Vegetal and Grit-Tempered Ware Forms 531
Figure 4.79. Tol-e Spid Phase 15 Vegetal- and Vegetal and Grit-Tempered Ware Forms 533
Figure 4.80. Tol-e Spid Phase 15 Grit-Tempered Ware Forms 535
Figure 4.81. Tol-e Spid Phase 15 Grit-Tempered Ware Forms 537
Figure 4.82. Tol-e Spid Phase 15 Grit, Grey Grit and Fine Red-Slipped and Residual Ware Forms 539
Figure 4.83. Tol-e Spid Phase 14 Vegetal and Grit-Tempered Ware Forms 541
Figure 4.84. Tol-e Spid Phase 14 Vegetal-, Vegetal and Grit and Grit-Tempered Ware Forms 543
Figure 4.85. Tol-e Spid Phase 14 Grit-Tempered and Ware Forms 545
Figure 4.86. Tol-e Spid Phase 14 Grit-Tempered Ware Forms 547
Figure 4.87. Tol-e Spid Phase 14 Fine Buff/Orange and Red-Slipped Ware Forms 549
Figure 4.88. Tol-e Spid Phase 14 Residual Vegetal and Grit-Tempered Ware Forms 551
Figure 4.89. Tol-e Spid Phase 14 Residual Grit-Tempered Ware Forms 553
Figure 4.90. Tol-e Spid Phase 14 Residual Red-Slipped, Buff and Archaic Ware Forms 555
Figure 4.91. Tol-e Spid Phase 13 Vegetal and Grit-Tempered Ware Forms 557
Figure 4.92. Tol-e Spid Phase 13 Grit-Tempered Ware Forms 559
Figure 4.93. Tol-e Spid Phase 13 Grit, Fine Red-Slipped and Residual Vegetal-Tempered Ware Forms 561
Figure 4.94. Tol-e Spid Phase 13 Residual Grit, Fine Red-Slipped and Archaic Vegetal Ware Forms 563
Figure 4.95. Tol-e Spid Phase 12 Vegetal and Grit and Grit-Tempered Ware Forms 565
Figure 4.96. Tol-e Spid Phase 12 Grit-Tempered Ware Forms 567
Figure 4.97. Tol-e Spid Phase 12 Grey Grit-Tempered and Glazed Ware Forms 569
Figure 4.98. Tol-e Spid Phase 12 Residual Vegetal- and Vegetal and Grit-Tempered Ware Forms 571
Figure 4.99. Tol-e Spid Phase 12 Residual Vegetal and Grit, Grit, Red-Slipped, Buff and Archaic Wares 573
Figure 4.100. Tol-e Spid Phase 11 Grit-Tempered Ware Forms 575
Figure 4.101. Tol-e Spid Phase 11 Grit and Grey Grit-Tempered Ware Forms 577
Figure 4.102. Tol-e Spid Phase 11 Residual Vegetal, Grit-Tempered and Red-Slipped Ware Forms 579
Figure 4.103. Tol-e Spid Phase 10 Vegetal and Grit and Grit-Tempered Ware Forms 581
Figure 4.104. Tol-e Spid Phase 10 Grit, Grey Grit-Tempered and Glazed Ware Forms 583
Figure 4.105. Tol-e Spid Phase 10 Residual Vegetal and Grit-Tempered Ware Forms 585
Figure 4.106. Tol-e Spid Phase 9 Vegetal and Grit and Grit-Tempered Ware and Residual Forms 587
Figure 4.107. Tol-e Spid Phase 8 Fine, Grit-Tempered and Residual Ware Forms 589
Figure 4.108. Tol-e Spid Phase 7 Grit and Grey Grit-Tempered and Residual Ware Forms 591
Figure 4.109. Tol-e Spid Phase 6 Grey Grit-Tempered and Residual Ware Forms 593
Figure 4.110. Tol-e Spid Phase 5 Grit-Tempered and Red-Slipped Ware Forms 593
Figure 4.111. Tol-e Spid Phase 4 Grit-Tempered Ware Flask 595
Figure 4.112. Tol-e Spid Phase 4 Grit, Grey Grit-Tempered and Fine Red-Slipped Ware Forms 597
Figure 4.113. Tol-e Spid Phase 4 Residual Vegetal and Grit and Grit-Tempered Ware Forms 599
Figure 4.114. Tol-e Spid Phase 3 Grit-Tempered Ware Storage Vessel 601
Figure 4.115. Tol-e Spid Phase 3 Grit, Grey Grit and Vegetal-Tempered Ware with Red Slip Forms 603
Figure 4.116. Tol-e Spid Phase 3 Residual Vegetal and Grit-Tempered and Buff Ware Forms 605
Figure 4.117. Tol-e Spid Phase 2 Grit, Grey Grit and Residual Ware Forms 607
Figure 4.118. Tol-e Spid Phase 1 Fine, Grit-Tempered and Residual Wares 609
Figure 4.119. Tol-e Spid Phase 24 Selected Ceramics 610
Figure 4.120. Tol-e Spid Phase 23 Selected Ceramics 610
Figure 4.121. Tol-e Spid Phase 22 Selected Ceramics 611
Figure 4.122. Tol-e Spid Phase 21 Selected Ceramics 611
Figure 4.123. Tol-e Spid Phase 20 Selected Ceramics 612
Figure 4.124. Tol-e Spid Phase 19 Selected Ceramics 613
Figure 4.125. Tol-e Spid Phase 18 Selected Ceramics 614
Figure 4.126. Tol-e Spid Phase 18 Selected Ceramics 615
Figure 4.127. Tol-e Spid Phase 17 Selected Ceramics 616
Figure 4.128. Tol-e Spid Phase 17 Selected Ceramics 617
Figure 4.129. Tol-e Spid Phase 16 Selected Ceramics 618
Figure 4.130. Tol-e Spid Phase 15 Selected Ceramics 619
Figure 4.131. Tol-e Spid Phase 15 Selected Ceramics 620
Figure 4.132. Tol-e Spid Phase 14 Selected Ceramics 621

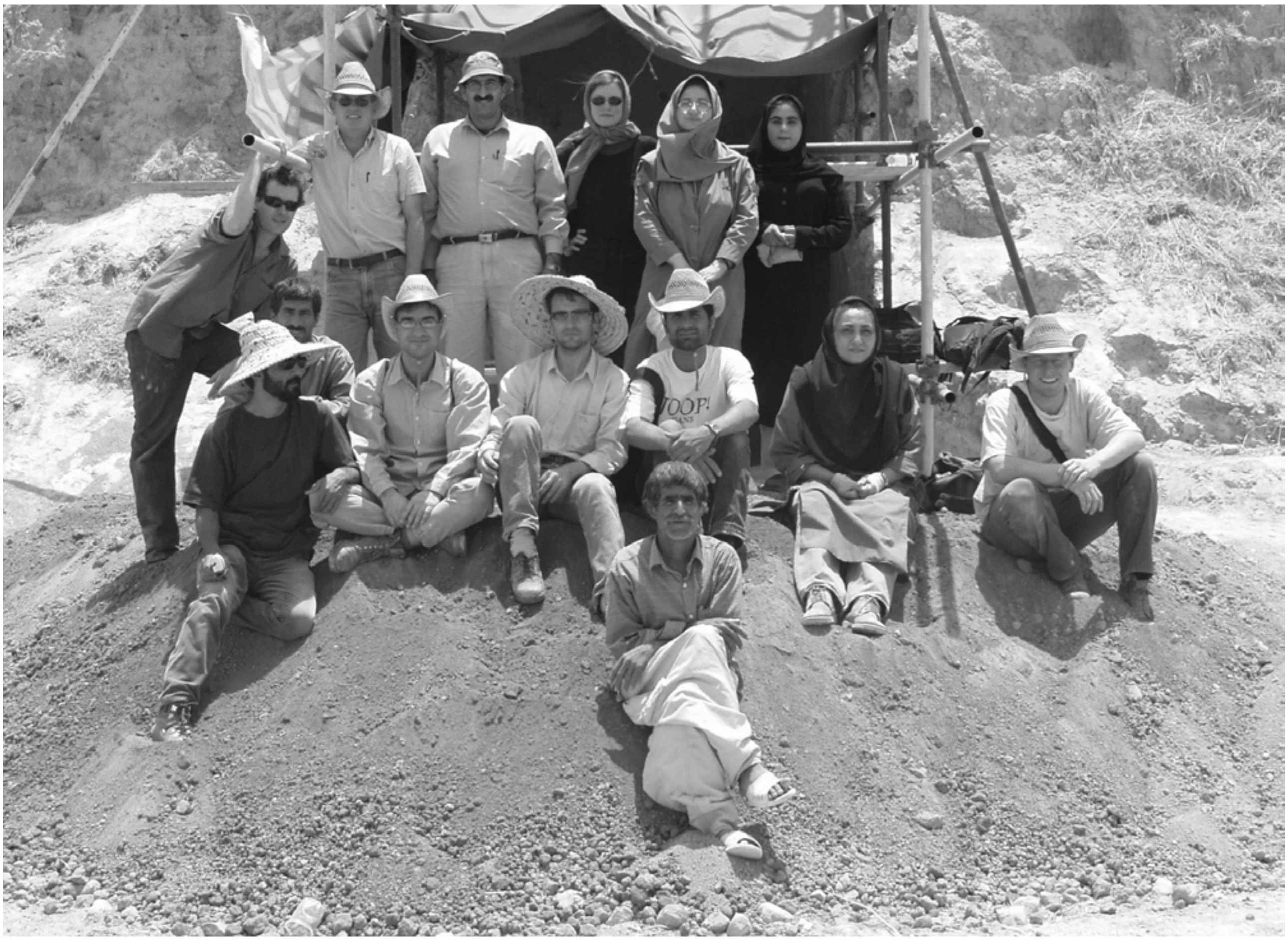
Figure 4.133. Tol-e Spid Phase 14 Selected Ceramics 622
Figure 4.134. Tol-e Spid Phase 13 Selected Ceramics 623
Figure 4.135. Tol-e Spid Phase 12 Selected Ceramics 624
Figure 4.136. Tol-e Spid Phase 11 Selected Ceramics 625
Figure 4.137. Tol-e Spid Phase 10 Selected Ceramics 626
Figure 4.138. Tol-e Spid Phase 9 Selected Ceramics 627
Figure 4.139. Tol-e Spid Phase 8 Selected Ceramics 628
Figure 4.140. Tol-e Spid Phase 7 Selected Ceramics 628
Figure 4.141. Tol-e Spid Phase 6 Selected Ceramics 629
Figure 4.142. Tol-e Spid Phase 5 Selected Ceramics 629
Figure 4.143. Tol-e Spid Phase 4 Selected Ceramics 630
Figure 4.144. Tol-e Spid Phase 3 Selected Ceramics 631
Figure 4.145. Tol-e Spid Phase 2 Selected Ceramics 632
Figure 4.146. Tol-e Spid Phase 1 Selected Ceramics 632
Figure 4.147. Tol-e Spid Phase 22 Stone Container 633
Figure 4.148. Tol-e Spid Sub-Phase 18b Flaked Stone Fragment 633
Figure 4.149. Tol-e Spid Sub-Phases 16a & b Metal Objects 633
Figure 4.150. Tol-e Spid Sub-Phase 15c Ring Stone and Disc 634
Figure 4.151. Tol-e Spid Phase 14 Clay Figurine 634
Figure 4.152. Tol-e Spid Phase 12 Carnelian Bead 634
Figure 4.153. Tol-e Spid Phase 12 Fired Brick Fragments 635
Figure 4.154. Tol-e Spid Section showing provenience of radiocarbon samples 636
Figure 4.155. Tol-e Spid Probability Distributions of the Radiocarbon Determinations 637
Figure 4.156. Tol-e Spid Probability Distributions of selected intervals 638

Figure 5.1. The state of bone preservation (TS Phase 11) 639
Figure 5.2. Evidence of rodent gnawing marks on bones from Tol-e Nurabad 640
Figure 5.3. Bones showing signs of gnawing and digestion from Tol-e Nurabad and Tol-e Spid 641
Figure 5.4. Bones showing cut marks from Tol-e Nurabad 642
Figure 5.5. A worked proximal-mesial part of a caprini and two awls made from the long bones of small ungulates (TN A Phase 24) 643
Figure 5.6a. Human mandibule fragment (TN A Phase 1), 5.6b. Human cranial fragment (TS Phase 16) 644
Figure 5.7. Taxonomic distribution of the faunal remain in the three stratigraphic soundings 645
Figure 5.8. Bones showing pathologies from Tol-e Nurabad and Tol-e Spid 646
Figure 5.9. Equid teeth from Tol-e Nurabad and Tol-e Spid 646
Figure 5.10. Metric comparison of TS equid teeth with reference material for horse (E. caballus) and onager (E. hemionus) and donkey (E. asinus) 647
Figure 5.11. Left mandible of a young suid (TS Phase 11) 648
Figure 5.12a-b. Fragment of avertebral disk, external and internal views (TN A Phase 15) 648
Figure 5.13a-b. Cyprinid pharingial bone (TS Phase 7) 649
Figure 5.14. Distribution of faunal remains in TN A and B and TS stratigraphic soundings 650
Figure 5.15. Evolution of subsistence economies in the Fars lowlands from the Neolithic to Post-Achaemenid period 651
Figure 5.A.1. TN A and B rodent teeth 652

Figure 6.1. View of MS1 Tappeh Sorna with the Sarab Siah visible in the foreground 653
Figure 6.2. View of MS10 Tappeh Jovi Khanimeh 653
Figure 6.3. View of MS20 Tappeh Molla Shamshiri with high ground water visible 653
Figure 6.4. View of MS39 Tappeh Mishband with modern terraces and field walls visible 653
Figure 6.5. Mamasani Survey - Neolithic Period Ceramics 655
Figure 6.6. Mamasani Survey - Neolithic Period Ceramics 657
Figure 6.7. Mamasani Survey - Early and Middle Bakun Period Ceramics 659
Figure 6.8. Mamasani Survey - Middle and Late Bakun Period Ceramics 661
Figure 6.9. Mamasani Survey - Middle and Late Bakun Period Ceramics 663
Figure 6.10. Mamasani Survey - Lapui Period Ceramics 665
Figure 6.11. Mamasani Survey - Lapui Period Ceramics 667
Figure 6.12. Mamasani Survey - Lapui Period Ceramics 669
Figure 6.13. Mamasani Survey - Lapui Period Ceramics 671
Figure 6.14. Mamasani Survey - Lapui Period Ceramics 673
Figure 6.15. Mamasani Survey - Banesh Period Ceramics 673
Figure 6.16. Mamasani Survey - Kaftari Period Ceramics 675
Figure 6.17. Mamasani Survey - Elamite Period Ceramics 677
Figure 6.18. Mamasani Survey - Elamite Period Ceramics 679

Figure 6.19. Mamasani Survey - Elamite Period Ceramics **681**
Figure 6.20. Mamasani Survey - Elamite Period Ceramics **683**
Figure 6.21. Mamasani Survey - Achaemenid and Post-Achaemenid Period Ceramics **685**
Figure 6.22. Mamasani Survey - Achaemenid and Post-Achaemenid Period Ceramics **687**
Figure 6.23. Mamasani Survey - Achaemenid and Post-Achaemenid Period Ceramics **689**
Figure 6.24. Mamasani Survey - Achaemenid and Post-Achaemenid Period Ceramics **691**
Figure 6.25. Mamasani Survey - Sasanian Period Ceramics **693**
Figure 6.26. Mamasani Survey - Sasanian Period Ceramics **695**
Figure 6.27. Mamasani Survey - Sasanian Period Ceramics **697**
Figure 6.28. Mamasani Survey - Sasanian Period Ceramics **699**

Figure 7.1. Determinations for Tol-e Nurabad (black) and Tol-e Spid (grey) **700**



The Mamasani Archaeological Project team outside the Trench A sounding at Tol-e Nurabad.

Back Row Standing (left to right): Dr. Lloyd Weeks, Prof. Dan Potts, Mr. Kourosh Alamdari, Ms. Bernadette McCall, Ms. Lily Niakan, Ms. Sadigeh Ansari (student volunteer).
Back Row Seated (left to right): Mr. Kourosh Roustaei, Mr. Rezaii, Mr. Karim Alizadeh, Mr. Alireza Khosrowzadeh, Mr. Mohsen Zeidi, Ms. Mojgan Seyedin, and Dr. Cameron Petrie. *Front Row Seated*: Mr. Niknam.
Absent: Mr. Alireza Asgari Chaverdi, Mr. Arash Lashkari, Ms. Hildreth Potts, Ms. Sophie Jackson, Ms. Monireh Avazeh (student volunteer).

Preface and acknowledgements to the 1st edition

In November 2002, a small team of Iranian and Australian archaeologists carried out a rapid survey in southwestern Iran, focussing on the key route between the Elamite capitals at Susa and Anshan, the route from Anshan to the major Elamite seaport at Liyan on the Bushehr peninsula, and the route from lowland Khuzestan to the Bakhtiari Mountains (see Figure 1.2). The survey team was comprised of Mr. K. Roustaei (Iranian Center for Archaeological Research), Professor D.T. Potts (University of Sydney), Dr. L.R. Weeks (then of the Peabody Museum, Harvard University, now of University of Nottingham), and Dr. C.A. Petrie (then of the University of Sydney, since of Somerville College, University of Oxford, and now of the University of Cambridge). The survey was far from intensive, aiming rather to provide an overview of specific regions and archaeological sites that were recorded along the main communication routes between these key areas of Elamite settlement. Most importantly, the brief survey offered an opportunity to assess the potential of these areas for further archaeological research.

It was during this survey that we first visited the Mamasani District, which is focussed around a series of small, well-watered, and highly fertile mountain valleys that lie along the main route between lowland Susiana and the highland Kur River Basin. The most significant mounded sites visited at this time were Tol-e Nurabad, which at 23 m high and c.9 ha is the largest site in the Dasht-e Nurabad, and Tol-e Spid, which survives to a height of 16 metres and c.2 ha and overlooks the Dasht-e Rostam-e Yek (see Plates 1-3). The ceramic material observed on the surface of both sites suggested that they were occupied from early prehistory to the 1st millennium BC, a chronological span that was verified and extended by material recovered during their subsequent excavation. On the basis of this preliminary visit, these two sites, and the Mamasani District as a whole, were selected as the focus for our further research.

This volume presents the results of the first stage of our archaeological field research in Mamasani, which consisted of test soundings at Tol-e Nurabad and Tol-e Spid, and a regional survey of the Dasht-e Rostam-e Yek and Do plains. The research was conducted over two six-week seasons in February-March and June-July 2003, with a subsequent one-month study season in early 2004.

The survey in 2002 and all subsequent field research in Mamasani was carried out under the auspices of a short term agreement between the Iranian Center for Archaeological Research (ICAR) of the Iranian Cultural Heritage and Tourism Organisation (ICHTO) and the University of Sydney. None of this research would have been possible without the support of Mr. Seyed Mohammad Beheshti, Director General of the ICHTO, Mr. Jalil Golshan, Deputy Director of the ICHTO, and Dr. Massoud Azarnoush, the Director of the ICAR of the ICHTO. In addition, we have also benefited from the support of field officers of the ICHTO stationed in Shiraz, Bushehr, Behbehan, Ram Hormuz, Izeh, Shahr-e Kord and Ahwaz.

The field research in the Mamasani District was directed by Professor D.T. Potts and Mr. K. Roustaei. As will be apparent from the list of authors of this volume, the results of this project are the product of collaboration between scholars from a number of institutions. The team members were: Mr. K. Alamdari, Mr. K. Alizadeh, Mr. A. Khosrowzadeh, Mr. A. Lashkari, Ms. L. Niakan, Ms. M. Seyedin (ICAR); Mr. A. Asgari Chaverdi (formerly of the Parse-Pasargad Research Foundation, now of the Shiraz Branch of the ICHTO); Mr. M. Zeidi (formerly of Tehran University); Ms. B. McCall, Ms. H.B. Potts and Ms. S.C. Jackson (University of Sydney); Dr. C.A. Petrie, and Dr. L.R. Weeks (see Figure i). Analysis of the faunal remains was carried out by Dr. M. Mashkour of the CNRS/National Museum of Natural History – France.

This project has been possible thanks to research funding primarily provided by a Discovery Project Grant from the Australian Research Council. Organisational and financial support in Iran has been provided by the ICAR and the ICHTO. Research funding and support has also been granted by the Wainwright Bequest from the Oriental Institute University of Oxford, Somerville College University of Oxford, the British Institute of Persian Studies, and the Iran Heritage Foundation. The contribution made by Lloyd Weeks was supported by a MacCurdy Post-Doctoral Fellowship at the Peabody Museum of Archaeology and Ethnology, Harvard University, and the contribution made by Cameron Petrie was supported by the Katherine and Leonard Woolley Junior Research Fellowship at Somerville College, Oxford. In order to ensure the widest possible dissemination of the results of this research, this volume is being published in both English and Persian.

This fieldwork would not have been possible without the kindness, support and detailed knowledge of a number of people from Mamasani. Most importantly, we have benefited from the comprehensive archaeological knowledge of Mr. Hassan Habibi Fahliani. Mr. Habibi has documented the history and archaeology of the region in a number of books in Persian, is actively involved in working to preserve the archaeological heritage of the area, and is an invaluable source of information and inspiration. In addition we received invaluable friendship and support from the families of two of our team members, Mr. Kourosh Alamdari and Mr. Arash Lashkari, who are originally from the town of Nurabad-e Mamasani. We would also like to thank Ms. Sadigeh Ansari and Ms. Monireh Avazeh for volunteering their time to help with the excavations, and Mahmad Alamdari and Reyhan Rezaiye for their service and support in maintaining the team in the field and at home.

DTP KR LRW CAP

Preface and acknowledgements to the 2nd edition

The response from colleagues to the appearance of the 1st edition of this volume was tremendous but, for various reasons, it proved difficult to distribute the book from Tehran where it was published. Although co-publication with a publisher in Britain, Australia or Europe was investigated five years ago, nothing came of these original enquiries. Earlier this year, however, Dr. Cameron Petrie again raised the issue of distribution and, with the assistance of Dr. Abbas Moghaddam, we put a proposal to Dr. Mohammad Mortezaie, Director of the Iranian Center for Archaeological Research (ICAR), suggesting the publication of a revised, 2nd edition, as well as a downloadable PDF version, outside of Iran so that students and scholars with an interest in Iranian archaeology could easily access the book. To our great delight this proposal was approved and the result stands before you.

It was never our intention to re-write sections of this book to take into account literature, discoveries or new hypotheses that have emerged since 2006 when the 1st edition appeared. Rather, our aim, beyond making the book more accessible, was simply to correct typographical errors and, in some cases, references to works that, in 2006, appeared as ‘in press’ but have since been published. This 2nd edition, therefore, is corrected, but not substantively revised. Perhaps the biggest change, however, is to the editorship. Both Dr. Cameron Petrie (Univ. of Cambridge), responsible for all of the typographical lay-out as well as the coordination of contributions by the many Iranian and Australian authors involved in composing the text, plates and figures for Tol-e Spid, and Dr. Lloyd Weeks (Univ. of Nottingham), responsible for the coordination of the text, plates and figures for Tol-e Nurabad, contributed countless hours to the production of this volume and it seemed only fitting that their names, too, should appear as co-editors on this updated edition.

Time has not stood still since the 1st edition appeared in 2006 and the Mamasani project continues to evolve involving a new phase of excavations at Qaleh Kali (Jinjun/Tappeh Survan) and renewed excavations at Tol-e Nurabad, as well as coring for palaeoclimatic reconstruction (Dr. Matthew Jones, Univ. of Nottingham) in the region. Since 2006 Mr. Alireza Askari Chaverdi (ICAR) has been our ever helpful co-director, joined during the 2009 season at Tol-e Nurabad by Mr. Alireza Sardari. Beginning in 2009 the Australian Research Council awarded another five years of funding to sustain our collaboration from the Australian side, with Mr. Alireza Askari Chaverdi, Dr. Cameron Petrie, Dr. Lloyd Weeks and Prof. D.T. Potts as project co-directors. We all hope that the Mamasani region will prove as rewarding to readers of this volume as it has been to those of us who have been privileged to conduct field research there since 2002.

DTP

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B.I.P.S.

IRAN
HERITAGE

Chapter 1. The Mamasani District and the Archaeology of Southwestern Iran

D.T. Potts, K. Roustaei, L.R. Weeks and C.A. Petrie

1.1. Archaeology in Southwestern Iran

Southwestern Iran holds a pre-eminent position in Iran's archaeological heritage. The region that includes the lowland plains of Khuzestan and the adjacent Zagros highlands of Fars was the heartland of the Persian Empires ruled by the Sasanian and Achaemenid Dynasties (c.AD 205-638 and c.539-330 BC respectively). It was also the home of the various Elamite polities and states that engaged in warfare, political intrigue and trade with Babylonia and Assyria during the Bronze and Iron Ages (c.2200-641 BC) (see Figure 1.1). Archaeology in Iran can likewise trace its origins to the southwest, beginning in the late 19th century with the excavations at Susa that produced a series of spectacular archaeological discoveries and established a material "footprint" for these historically-attested political entities that played a dramatic role in the history of the ancient Near East.

The initial excavations at Susa and nearby sites were carried out under the terms of the exclusive concession granted to the French by Nasr ed-Din Shah. Earlier research had revealed that Susa was Biblical Shushan, the site of Daniel's tomb, and the location of one of Darius' royal palaces (see Potts 1999: 5-9, 325-335). The excavations by French and Iranian scholars that continued throughout most of the 20th century at Susa and also those at Chogha Zanbil (Ghirshman 1966) and Haft Tepe (Negahban 1991), led to the theory that Susa and the plains of Khuzestan were the core of ancient Elam, a name used somewhat imprecisely by Mesopotamian scribes from the 3rd millennium BC onwards to describe the regions and polities immediately beyond their southeast border (Potts 1999: 8, 93ff.). More recently, there has been a major shift in the conception of ancient Elam, and it has become clear that Susa and its hinterland was but one of the major political centres in southwestern Iran, and that its importance fluctuated through time (e.g. Amiet 1979; Vallat 1980; Potts 1999).

With the lapsing of the French firman in 1927, excavations by the Oriental Institute of the University of Chicago began at Persepolis in 1930, and subsequently expanded to Naqsh-e Rustam and Istakhr. These excavations provided vivid insight into the monuments of the ancient Achaemenid and Sasanian Persians that lay in highland Fars, over 500 kms to the southeast of Susa. Additional work was carried out subsequently at Pasargadae, the royal capital of Cyrus (Sami 1956; Stronach 1978). With the discovery and excavation of Tal-e Malyan in the Kur River Basin during the late 1960s and 1970s, a sound identification for the ancient highland Elamite capital of Anshan was finally secured. This established a clear impression of two of the main foci of ancient Elam (see Figure 1.1).

The earliest excavations at Susa and Persepolis were also significant for providing the first evidence of the prehistoric societies and peoples of the region. In the lowlands, the excavations below the historic period levels at Susa revealed a long sequence of occupation extending from the late 5th millennium into the later 3rd and 2nd millennia BC. As part of the early work of the French Mission in Iran, prehistoric material was also excavated from other lowland sites such as Tepe Musiyan in the Deh Luran plain (Gautier and Lampre 1905; see also Hole et al. 1969: 65-72). In the century following these pioneering projects, the early prehistory of Khuzestan has been examined in detail through excavations at the important Neolithic (and later) sites of Chogha Bonut (Alizadeh 2003a) and Chogha Mish (Delougaz and Kantor 1996; Alizadeh 2008) in Susiana, and Tepe Ali Kosh, Chogha Sefid, and Tepe Sabz in Deh Luran (Hole et al. 1969; Hole 1977). Likewise, developments in the 5th and 4th millennia BC have been examined through excavations at Jaffarabad, Djowi, Bendebal, and Qabr Sheykheyn in Khuzestan (Dollfus 1978a, 1978b; Weiss 1976) and at Tepe Farukhabad in Deh Luran (Wright (ed.) 1981). The results of these excavations have been significantly extended and contextualised by programmes of archaeological survey undertaken on the Susiana and Deh Luran Plains (e.g. Adams 1962; Johnson 1973; Wenke 1975-1976; Miroschedji 1981a; Alizadeh 1992), and in areas to the northwest (Hole et al. 1969), east (Wright (ed.) 1979; Zagarell 1979, 1982), and southeast (Dittman 1984; Moghaddam and Miri 2003; 2007; Moghaddam 2008; Wright and Carter, E. 2003; Alizadeh et al. 2004).

In the highlands, a comparable prehistory extending back to the 5th millennium BC was first identified in the 1930s, through the Oriental Institute Persian Expedition excavations at the mounds of Tall-i Bakun A and B, which are situated less than 3 kms from Persepolis (Langsdorff and McCown 1942; also Egami and Masuda 1962; Alizadeh 1988, 1994, 2004, 2006). A relative sequence of prehistoric occupation in the Kur River Basin was subsequently established by Vanden Berghe (1952; 1954) on the basis of surface collections and excavated soundings, and this was followed by a number of small-scale excavations at the Neolithic sites of Tall-i Mushki (Fukai et al. 1973) and Tall-i Jari A and B (Egami et al. 1977; Maeda 1986; Nishiaki and Mashkour 2006), and the 5th millennium BC sites of Tall-i Gap (Egami and Sono 1962), and at Tall-i Nokhodi (Goff 1963, 1964).

Vanden Berghe's prehistoric sequence was subsequently expanded as a result of extensive surveys by Sumner (1972), and enhanced by intensive surveys by Alden (1979), while additional surveys were carried out by Gotch (1968; 1969), Jacobs (1980) and Rosenberg (2003). Most recently, work has been carried out by researchers from the ICHTO Shiraz office and from the Parse-Pasargad Research Institute. Outside of the Kur River Basin, wide ranging surveys of other parts of Fars were first carried out by Sir Aurel Stein in the 1930's (1936; 1940). A detailed survey of Fasa and Darab was subsequently undertaken by de Miroschedji (1972; 1974), and Alizadeh (2003b) has recently surveyed many of the small intermontane valleys to the northwest of the Kur River Basin. The knowledge of the prehistoric sequence gained from these surveys has been further elaborated by excavations carried out at the 4th millennium BC site of Tal-e Kureh (Alden 1979; Sumner 2003: 187-198), the primarily 4th to 2nd millennium BC site of Tal-e Malyan (e.g. Nicholas 1990; Carter, E. 1996; Sumner 2003), and the 2nd to 1st millennium BC site of Darvazeh Tepe (Jacobs 1980).

The cumulative results of these research programmes demonstrate that various polities in ancient southwestern Iran played a key role in several of the fundamental transitions in the human society, economy, and settlement of Iran. These transformations include the introduction and development of Neolithic food producing economies; the rise of nomadic pastoralism as a subsistence regime; the growth of complex ranked and stratified societies; early urbanism and state formation; the development and spread of administrative technologies; the expansion and intensification of exchange systems; and the rise of multi-regional, ethnically diverse empires.

Between the Highlands and the Lowlands

A *leitmotif* of the archaeology of southwestern Iran that played a role in many of the aforementioned issues is the geographical and cultural dichotomy between lowland and highland areas (e.g. Amiet 1979). The early historical periods, for example, can be seen as a long-term record of alternating cultural cohesion or fragmentation of highland and lowland groups (e.g. Potts 1999; Miroschedji 2003). Contemporary textual sources highlight the ability of the most successful political entities in the region to integrate the diverse peoples and polities of the lowlands and highlands (e.g. Potts 1999: 160-257).

Given that the main political and population centres of the lowland and highland areas lay in excess of 500 kms apart, the successful integration of these distant areas depended on control of the communication routes between them. Beginning in Susiana, the main route crossed the lowland plains of Shushtar, Ram Hormuz, and Behbehan/Zuhreh, before traversing mountainous passes via Dogonbadan to enter the highland plains in our specific research area, Mamasani. From Mamasani, a variety of possible passes link the scattered intermontane valleys of the Zagros with the Kur River Basin approximately 100 km to the east (see Figure 1.2; also Chapter 2.1.4)[1].

Despite evidence for their importance in the past, the regions between Susa and Anshan have been the subject of very little archaeological research. Stein (1940) undertook a brief survey of the entire route between Persepolis and Susa in 1935, and intensive archaeological surveys have only been undertaken in Ram Hormuz (Wright and Carter, E. 2003) and in the Behbehan and Zuhreh plains (Dittmann 1984). Excavations in these regions are even rarer, being limited to the soundings excavated by Stein on his survey, including several mounds on the Behbehan Plain (Stein 1940: 79-81), the Oriental Institute excavations at Tall-i Ghazir on the Ram Hormuz plain (Whitcomb 1971), and the more recent soundings at Tepe Sabz on the Behbehan plain (Nissen 1976; Dittman 1984). The Mamasani District has been periodically visited by archaeologists and geographers since the 19th century (see Section 1.2 below), but the area has failed to attracted systematic archaeological research.

This academic disinterest is difficult to fathom. It may reflect a prevailing conception that the small agricultural plains that comprise much of the route between Susiana and the Kur River Basin were in some way "peripheral" to the major political, social, and economic developments taking place at either end of this long route of contact. Whilst it was recognised that the mountainous terrain of the Zagros had clearly granted strategic importance to the regions located along the main Susa-Anshan routes, the broken topography of the highlands was simultaneously regarded by some scholars as a significant hurdle to the indigenous development of political complexity. It has been suggested, for example, that few valleys in southwestern Iran, other than the plains of Khuzestan and the Kur River Basin, were large and fertile enough to support a significant sedentary population with centralised political organisation (e.g. Carter, E. 1994: 75; Miroschedji 2003: 18). Significantly, whilst none of the individual plains comprising the Mamasani District is particularly large, the valleys as a unit comprise the fourth largest tract of agricultural land in SW Iran, after Susiana, the Kur River Basin, and Ram Hormuz (see Chapter 2.1.4).

The implication that centralised political organisation must result from a sedentary population, does however ignore the political, economic, and demographic power of the mobile pastoral groups which have occupied the region from later prehistory. The development of nomadic pastoralism from the late Neolithic period onwards has been a particular focus of research in the western Zagros in the last two decades (e.g. Hole 1979; 1980; 1996; 2004; Bernbeck 1992; Abdi 2003a), and the role of these societies in the development of political complexity in Fars has been particularly emphasised (e.g. Alizadeh 1988, 2003b; 2004; 2006; Sumner 1986b; 1988b).

In general, although the importance and complexity of the polities that existed in the interstitial regions between Susiana and the Kur River Basin may have waxed and waned precipitously, their relationship to Elamite "centres" could at times have been significant. A historically attested example is mentioned in relation to campaigns undertaken against Anshan by Mesopotamian kings from the Third Dynasty of Ur. The campaigning Mesopotamians mention the region of Huhnur, and characterise it as the Key or the Bolt to the land of Anshan (Hansman 1972: 117-118; Duchesne 1986)[2]. These are both metaphors signifying that Huhnur was strategic and pivotal. Later texts found by Ezat Negahban at the Elamite site of Haft Tepe (c.1500 BC), refer to a 'King of Huhnuri' (Herrero and Glassner 1990: 14; Glassner 1991: 18)[3], and imply that for some time during the mid-2nd millennium BC, this region may have had a period of autonomy before being incorporated into the united Middle Elamite kingdom, which at the latest is likely to have taken place under Shilhak-Inshushinak (see Chapter 7 below). Huhnur is also mentioned 700 years later in lists of areas conquered by Assurbanibal during his last campaign against Elam (c.647 BC) (Streck 1916: 50; Herzfeld 1968: 178; Potts 2005b: 174; Petrie et al. 2005: 52). The strategic significance of Huhnur has led to the suggestion that the same region was also the location of the 'Persian Gates', which were captured by Alexander on his way to Persepolis in 330 BC (e.g. Herzfeld 1968: §146), and which marked the boundary between the lowlands and highlands of southwestern Iran. Although there is no consensus, a number of scholars have suggested that the Mamasani District should be considered as a possible candidate for the location of Huhnur (e.g. Herzfeld 1968: §146; Hansman 1972: 118; Petrie et al. 2005: 52, 66-67; contra Klíma 1972; Duchesne 1986) and of the 'Persian Gates' (e.g. Herzfeld 1968: §146; Hansman 1972: 118; Bosworth 1980: 324-329; MacDermott and Schippman 1999: 294; contra Speck 2002). However, the recent publication of an inscription has confirmed that Huhnur was the site of Tepe Bormi, near Ram Hormuz (Nasrabadi 2005).

The Iranian/Australian collaborative project is the first to carry out investigations in this provincial region of Fars. Our research aims not only to investigate the archaeological history of the region itself, but also to provide a case study of the ways in which information from "peripheral" regions and polities can be used to develop an integrated understanding of the early complex societies of southwestern Iran.

1.2. Previous Research in Mamasani

While Fars province has a long history of archaeological exploration primarily concentrated upon the Kur River Basin, a number of the surrounding plains and areas to the east, south and west have previously only been visited briefly. Scientific observations recorded in Western literature that specifically refer to the Mamasani District date back at least to 1810 when Lt. John Macdonald Kinneir became the first traveller to record his visit to the mountain-top fortress and settlement of Qaleh Sefid which was sacked by Timur (Kinneir 1813: 73), and is situated on a ridge towards the centre of the Mamasani District (see Plates 1 and 3). Kinneir was also among the first to suggest that Alexander's route from Susa to Persepolis ran through this part of Fars (Stein 1940: 18).

Considerably more knowledge of the Mamasani District was gained by Baron C.A. de Bode who visited 'the country of the Mamáseni' in 1841 (Bode 1843). Although aware of Kinneir's publication, de Bode described the area as 'a tract almost wholly unknown to European geographers' (Bode 1843: 75). Apart from providing a vivid description of the country and its people, de Bode also reported on Qaleh Sefid and published the first account of the Sasanian rock relief at Sarab-e Bahram (Bode 1843: 78), which lies at the southern end of the Mamasani District (see Plates 1 and 2). On leaving Sarab-e Bahram, de Bode proceeded north towards 'Nóbend-ján' (Naubindjan/Nobandagan), a settlement allegedly founded by Shapur I and attested in numerous medieval geographical works (e.g. Ibn Hawqal, Ibn al-Balkhi; cf. Schwarz 1896: 34-35; Stein 1940: 33; Le Strange 1905, 1912) which lies on the outskirts of the modern town of Nurabad (see Plates 1 and 2; Chapter 2.2.1). It was here that 'Timur halted before he laid siege to Kal'eh Sefid' (Bode 1843: 78). Thereafter it was approximately forty years before Captain H.L. Wells visited Mamasani in December 1881, on his way from Ahwaz to Shiraz, and made note of Qaleh Safid and a number of ancient mounds (Wells 1883: 160-162). At about the same time, F.C. Andreas and F. Stolze visited the stone tower of Dum-e Mil (or Mil-e Azhdaha, 'devil's tower') (Andreas and Stolze 1882), which lies on the southern edge of the Dasht-e Nurabad (see Plates 1 and 2). Several years later Dum-e Mil was visited again by G.N. Curzon (1892) and then by the American Iranologist A.V. Williams Jackson who linked it with the structures depicted on post-Achaemenid Persid coinage of the *frataraka* dynasty (Williams Jackson 1906: 302-303).

Ernst Herzfeld, however, was perhaps the first scholar to appreciate the broader archaeological significance of the Mamasani District. Herzfeld visited the area in 1905 during the preparation of his Berlin doctoral dissertation (Herzfeld 1908) and again between 8 and 14 April 1924 (Herzfeld 1926, 1928, n.d.)[4]. During his brief stays Herzfeld documented the Elamite rock relief of Kurangun; the settlement mound of Tol-e Spid; the Achaemenid site of Jinjan (Tappeh Servan); the late/post-Achaemenid rock-cut tomb of Dau-o Dokhtar[5]; the tower of Dum-e Mil (which he originally considered, mistakenly, an Achaemenid tower-tomb, Herzfeld 1908: 16-17); and the Sasanian rock-relief of Sarab-e Bahram (see Plates 1 and 2). Significantly, he suspected that the tomb at Dau-o Dokhtar (which he incorrectly attributed to Teispes or Cyrus I, both ancestors of Cyrus the Great) might contribute to the solution of the problem of the location of Anshan (Herzfeld 1926: 259; 1935: 35; 1941: 206). He also recognised that the tower at Dum-e Mil was in many respects similar to the ruin at Paikuli (Herzfeld 1926: 258), where he had discovered an important inscription of the early Sasanian king Narseh (AD 293-303), a conclusion later strengthened by Huff's detailed study (1975; see below).

On 13 April 1924 Herzfeld was shown a stamped brick which had been found at Tol-e Spid during the construction of a new wall. At the time the brick was in the possession of the Khan of the Rustam section of the Mamasani Lurs (Herzfeld 1928: 83), but its whereabouts today are unknown. The brick, which bore an inscription of Shilhak-Inshushinak mentioning the Elamite deity Kilahshupir (König 1965: §41A; Lambert 1972: 61; also see Chapter 4.1 and Figure 4.5)[6], convinced Herzfeld that Elamite civilisation, then known only in Khuzestan and near Bushehr on the Persian Gulf coast (at Tol-e Peytul, ancient Liyan), had existed in the interior of Fars as well.

Although Herzfeld believed that the villages at Tol-e Spid and Fahlian lay astride the Royal Road linking Susa and Persepolis via Pul-e Murd and Ardakan (Herzfeld 1928: 82; cf. 1968: 176), he was less interested in determining the course of this route than Sir Aurel Stein, who visited the region in 1935 (Stein 1940). During his fieldwork, Stein paid particular attention to the accounts of Alexander's journey from Susa to Persepolis, and his speculations on the location of the Persian Gates have continued to form the basis for most subsequent reconstructions of the route through this area (cf. Bosworth 1980: 324-329; Kleiss 1972; Duchesne 1986; Koch 1986; MacDermott and Schippmann 1999; *contra* Speck 2002). Stein also visited Qaleh Sefid and gave a detailed description of his ascent, noting that the masonry of the gatehouse suggested that it might have been a Sasanian foundation (Stein 1940: 29)[7]. In addition, Stein visited Kurangun, Jinjan, Tol-e Spid, Dau-o Dokhtar and Tappeh Sorna (Stein 1940: 36-38, 47), the latter being a mound discussed below (see Plates 1 and 4; Chapter 6.4). Several years after Stein's visit to the Mamasani District, Roman Ghirshman studied Dum-e Mil and published the first detailed study of it, but also erroneously followed Herzfeld in concluding that the structure was Achaemenid in date (Ghirshman 1944-45: 183ff.).

The first excavations in the Mamasani region date to 1959, when a Japanese expedition undertook exploratory soundings at Tepe Suruvan, the site recorded as Jin Jin by Herzfeld (Atarashi and Horiuchi 1963). Herzfeld had described the site as 'eine ganze achämenidische Stadt, mit Säulenbasen und anderen Architekturtrümmern auf dem Boden, wie in Persepolis angelehnt an einen steilen und hohen, völlig von Humus entbloßten Felsberg, und nahe des weiten und wasserreichen Flußbettes von Tulespid' (Herzfeld 1926: 258). The Japanese excavations, which lasted less than a week, confirmed the significance of the site and produced new photographs of the column bases originally seen by Herzfeld, but produced little in the way of substantive results.

While working at Pasargadae in the early 1960s, David Stronach visited Dau-o Dokhtar, although his observations on this monument were not published until 1978 (Stronach 1978). In contrast to Herzfeld, Stronach effectively argued that the tomb should be dated to somewhere between the late 5th and 3rd centuries BC (Stronach 1978: 304; also see Gall 1993). Stronach's Islamic sherd collection from Dau-o Dokhtar, supplemented by material collected elsewhere in the region by R. Löffler and E. Friedl (1967, 1974), was later published by D. Whitcomb, who concluded that the buildings at Dau-o Dokhtar date to the Early-Middle Islamic period c.9th-11th centuries AD (Whitcomb 1991).

During his survey of Iranian fire-temples, Klaus Schippmann visited Dum-e Mil (Schippmann 1971: 153ff), as did Wolfram Kleiss in 1971 (Kleiss 1972). However, the most detailed study of Dum-e Mil yet produced is by Dietrich Huff, who concluded that the structure is certainly Sasanian, dating to the second half of the 3rd century AD (Huff 1975: 191). This suggests that Dum-e Mil is broadly contemporaneous with the relief at Sarab-e Bahram (attributed to Bahram II - AD 276-293), which lies less than 10 km to the east, and also that it might predate the remains at Paikuli (attributed to Narseh I - AD 293-303) (Huff 1975: 191, 195).

In a study aimed at contextualising an unprovenanced brick bearing an inscription of Hutelutush-Inshushinak that mentioned Anshan, Maurice Lambert made reference to the stamped brick from Tol-e Spid and the rock relief at Kurangun as evidence for the presence of Elamites in Fars (Lambert 1972: 61). The similarity between the inscription on this brick and fragmentary examples found on the surface of Tal-e Malyan was critical for the identification of Tal-e Malyan as Anshan (Reiner 1973). However, the nature of the relationships in the Middle Elamite period between Susa and Tol-e Spid, and Tal-e Malyan and Tol-e Spid has remained unexplored.

In the late 1970s Louis Vanden Berghe, Ernie Haerinck and Erik Smekens re-visited the reliefs at Kurangun and Sarab-e Bahram as part of their comprehensive effort to photograph all of the rock reliefs in Iran (Vanden Berghe 1984). In 1986 Ursula Seidl published her definitive study of the relief at Kurangun, on which a considerable bibliography now exists (Seidl 1986; cf. Potts 1999; 2004). Subsequently, W. Kleiss published a short article on the visible structures and sherds found on the top of the rock outcrop alongside the Kurangun relief during a brief visit in 1990 (Kleiss 1993).

Abbas Alizadeh of the Oriental Institute (University of Chicago) visited Tol-e Nurabad in 1995 and suggested that the site might have been occupied from "the Bakun B1 period or earlier, and judging by its size, continued to be the occupational centre of the plain from late prehistoric through the Lapui, Proto-literate, and Kaftari periods" (Alizadeh 1994; 2003b). The remains of a structure similar in style to the remains at Jinjan are said to have been discovered at Tol-e Gach Garān-e Ka Khodada, 5 km to the south of Tol-e Nurabad (Asgari Chaverdi pers. comm.). Although these remains have not been seen first hand, column bases and capitals that are similar to Achaemenid types were evidently visible at the site (for location see Plate 2). Finally, Mr. Noruzi, of the ICHTO office in Shiraz, included plans and remarks about Tol-e Nurabad and Tol-e Spid in his M.A. thesis.

1.3. The Mamasani Archaeological Project: Methodology and Research Orientations

From a methodological perspective, the initial stages of the Mamasani Archaeological Project have been relatively uncomplicated. The research presented in this volume has incorporated small-scale excavations at two sites and a coordinated regional survey, an approach that was adopted for three main reasons. Firstly, the excavation of small but deep soundings at Tol-e Nurabad and Tol-e Spid has offered the possibility of unearthing well-stratified deposits covering large spans of the prehistoric and historic occupation in the region. The archaeology of Fars, in particular the understanding of the chronology of social and political developments in the region, has so far suffered from the lack of comparable soundings into deep, multi-period sites. Although the neighbouring Kur River Basin is the largest of the intermontane valley systems in Fars, only a handful of multi-period sites have been excavated there. Additionally, all of these have archaeological sequences much shorter than either Tol-e Nurabad or Tol-e Spid, and rarely have consecutive phases of occupation been investigated.

Secondly, the collection of a suite of charcoal samples from secure excavated archaeological contexts at Tol-e Nurabad and Tol-e Spid has allowed for an extensive programme of absolute dating of the Mamasani cultural material. This data has provided critical new chronological information, and builds upon the limited and patchy absolute dating evidence from the sites in the Kur River Basin and Khuzestan.

Finally, it was hoped that the excavation of deep soundings at Tol-e Nurabad and Tol-e Spid would yield a well stratified assemblage of ceramics and other cultural materials capable of providing a reliable chronological framework for the interpretation of the archaeological material collected during the contemporary surface survey of the region. As can be seen in the following chapters, this methodology has to a large extent been successful in delineating the chronology and extent of a variety of archaeological assemblages found in the Mamasani District.

However, this methodological approach represents but the first stage in our overall research programme, which in the most general terms aims to investigate the evolution of settlement and societies of the Mamasani District. Many of the broader research questions we aim to address through future work in Mamasani are of interest and relevance to many geographical regions of Iran or Western Asia. However, other foci of our research are intrinsic to our chosen region of study, in particular its location on the main route between the two major population and political centres of southwestern Iran.

One obvious pan-regional issue is the timing and nature of the transition to farming practices in different parts of Iran. The Mamasani District is located on one of the main routes through the southern Zagros by which Neolithic technology spread to southwestern Iran, parts of the Iranian Plateau, and beyond. The investigation of the early- to mid-Holocene human occupation of Mamasani will provide critical information for our understanding of the process of Neolithisation, particularly the issue of migration versus adaptation and/or adoption of farming technology by indigenous groups.

Likewise, the possible development of mobile pastoralism and its effects on contemporaneous social complexity has been one of the primary issues in the archaeology of prehistoric western Iran. The Mamasani district has a well-documented tradition of nomadic pastoralist communities in the recent past (e.g. Bode 1843: 80ff; see Chapter 2.2.1) and is situated in a geographical zone that is directly comparable to other regions of western Iran where nomadic pastoralism developed in the 5th millennium BC or earlier (see Chapter 2.3). Our future archaeological research in Mamasani will, therefore, have significant implications for our understanding of this critical social and economic development.

In contrast to such broad issues, a fundamental and intrinsic reason for conducting large-scale, systematic field research in the Mamasani District is to counteract the regional and geographic biases of the existing archaeological evidence from southwestern Iran. A number of significant questions regarding the relationship between lowland Susa and highland Anshan from the 4th millennium BC onwards remain unresolved, partly due to the lack of investigation in the areas between these two regions. For example, the appearance of Proto-Elamite/Susa III urban sites in Susiana and the Kur River Basin in the later 4th millennium BC represents the first manifestation of this level of socio-economic complexity anywhere in Iran. The position of the Mamasani District astride the main communication route between these urban foci offers the fascinating potential to examine interaction between highland and lowland spheres of influence.

The historically attested Elamite states of the 3rd and 2nd millennia BC have been intensively studied from the standpoint of both cuneiform evidence and archaeology (Potts 1999: 85ff.). However, as mentioned above, there has been substantial reconsideration of Elam during the last 25 years, which has drawn on the results of excavations at major sites in Susiana and the Kur River Basin to discuss the archaeology, historical geography, and long term political history of Elam (e.g. Carter, E. & Stolper 1984; Herrero and Glassner 1990; 1991; Negahban 1991; Vallat 1993; Potts 1999; 2006). This work has made it possible to characterise the broad scale differences between the capitals of the southwest and their surrounding areas, whilst at the same time highlighting the lack of information regarding the political, religious, and economic centres that existed outside of Susa and Anshan, in the smaller plains and mountain valleys between Susiana and the Kur River Basin (e.g. Miroschedji 2003).

Significantly, our excavations in Mamasani offer the possibility of examining how complex societies affected peoples, economies and polities in their hinterlands, and *vice versa*. The range of potential responses from indigenous Mamasani communities to contact with neighbouring complex societies is large, incorporating social, political, and economic spheres and spanning the spectrum from antagonistic to cooperative. Reactions recorded in archaeological contexts on a world-wide scale are illustrative of this potential complexity and unpredictability: the political realm may witness either increased unification (including secondary state formation) or fragmentation; demographically, populations and settlement systems may exhibit growth and decline (through processes such as rural-urban migration); economically, inter-regional exchange may increase or decline, modes of production may vary, and subsistence regimes may be modified. This list is far from exhaustive, but serves to demonstrate that the processes we are seeking to investigate, although unpredictable, are not amorphous or unquantifiable. Rather, they can exhibit explicit material correlates that may be preserved in the archaeological record. It is hoped that the archaeological record of the Mamasani District will shed some light on comparable developments, including the processes of urban growth and collapse in southwestern Iran. Given the current embryonic stage of our research, a demonstration of this hope is a task for the future.

Although the geographically “peripheral” nature of the Mamasani region seems clear, this is no reason to focus research elsewhere. On the contrary, unless areas like Mamasani are carefully studied and contextualised, our impression of the cultural dynamics of ancient southwestern Iran will be not only impoverished, but almost certainly misleading.

1.4. The Relative and Absolute Chronology of Fars

A plethora of chronological periodisations has been proposed for Fars over the past 50 years, each with its own strengths, weaknesses and terminological idiosyncrasies (e.g. Vanden Berghe 1954; Sumner 1972; Hole 1987a; Voigt and Dyson 1992; Miroschedji 2003; Alizadeh 2006). Despite the compilation of these general syntheses, the relative chronology of Fars remains somewhat contested, and radical reinterpretations continue to be proposed (e.g. Alizadeh 2004).

The uncertainties in the relative and absolute chronology of Fars reflect a number of factors, including the limited amount of fieldwork that has been undertaken in the region in the last two decades and the fact that in the 1970s much of the fieldwork focussed on full-coverage surface surveys, primarily in the Kur River Basin (e.g. Sumner 1972; Alden 1979; Jacobs 1980; Rosenberg 1985; 2003; also Miroschedji 1972; 1974), rather than on excavation of deeply-stratified archaeological sequences. The generally accepted prehistoric sequence for Fars has been built up from the results of excavations carried out from as early as the 1920s through to the 1970s, and it has been refined by the results of archaeological surveys (see Alden 1979; Sumner 1986b; 1988a; 1988b; 1990a; 1994b), soundings (e.g. Alden 2003a), and the reassessment of some of the excavated corpora (Voigt and Dyson 1992; Alizadeh 1988; 2006). Where appropriate, data has also been drawn from sites in Fars that lie outside of the Kur River Basin (e.g. Tol-e Nokhodi, Tepe Jalyan, and Pasargadae).

In recent years, a number of new research projects have commenced work in Fars, and have greatly expanded our knowledge of the archaeological material sequences of the region. Examples include the Fars Archaeology Project investigations at Toll-e Bashi, Kushk-e Hezar and Tal-e Malyan, the ICHTO/Oriental Institute excavations at prehistoric sites in the Marv Dasht, and our own ICAR/University of Sydney Mamasani Archaeological Project. New information is also being recovered from the salvage excavations currently taking place in the area being affected by the Sivand Dam Project constructions in the Tang-i Bulaghi. However, much of this work is ongoing, and the analyses remain preliminary.

The reconstructed relative and absolute chronology for Fars as used in this volume is shown in Figure 1.3, incorporating the results of our research in the Mamasani District and illustrating the chronology of the excavated deposits from Tol-e Nurabad and Tol-e Spid (outlined below in Chapters 3 and 4). The formulation of such a chronological chart is a complicated task. There are inherent difficulties in trying to establish a coherent chronological periodisation which spans both prehistoric and historic periods (cf. Miroschedji 2003) and which unifies the markedly heterogeneous archaeological assemblages of southwestern Iran into an overarching chronological scheme.

In this volume, we have adopted and adapted the cultural periodisation and terminology developed for the Kur River Basin to describe our material from Mamasani (Vanden Berghe 1952; 1954; Sumner 1972; 1988a; Voigt and Dyson 1992). We have not used this chronological system by default; rather it reflects our assessment of the long-term similarity between the archaeological assemblages of the Kur River Basin and those of the Mamasani District, and our desire to avoid the further proliferation of regionally specific chronological terminology.

There are, of course, a number of inherent difficulties and assumptions that follow from this decision. Most obviously, the similarity of the archaeological assemblages from the Kur River Basin and the Mamasani District is much greater at some times than at others, meaning that the adapted chronological terminology has a better “fit” in certain time periods. Moreover, the contemporaneity of similar assemblages must often be assumed rather than demonstrated. This problem has been counteracted to a significant extent by the substantial programme of radiocarbon dating of excavated deposits from Tol-e Nurabad and Tol-e Spid. These absolute dates have allowed us not only to establish our own independent regional absolute chronology in Mamasani, but also to characterise chronological relationships within and outside Fars and to examine some of the outstanding questions relating to the chronology of southwestern Iran as a whole.

However, the most subtle and potentially insidious effects of adopting the Kur River Basin chronology relate to assumptions regarding the nature of the cultural interrelations between Mamasani and neighbouring regions. Terms such as 'Bakun', 'Lapui' and 'Banesh' are used below in relation to archaeological material from Mamasani *only* to emphasise relative chronological comparisons with the Kur River Basin, and *not* to imply any particular direction of cultural influence from one region to the other. In one sense, it would be more correct to use terms such as "Bakun-like" or "Bakun-related" when describing the Mamasani archaeological material, but this approach soon becomes unnecessarily cumbersome, and has been avoided.

In the following sections, the archaeological evidence supporting our reconstruction of the relative and absolute chronology of Fars is presented and assessed. This serves the dual purposes of outlining our understanding of the Kur River Basin cultural sequence that we have adopted, and explicitly defining the components of that sequence that we have adapted based upon our own evidence from Mamasani.

The Palaeolithic Period

Human occupation in Fars has been recorded as early as the Middle Palaeolithic period. Important early sites include Eshkaft-i Gavi (Rosenberg 1985) and the open-air Jahrom quarry or flint-working site (Smith 1986). Rosenberg's and Sumner's surveys of the Kur River Basin have identified 22 likely Middle Palaeolithic sites, characterised by Mousterian-related stone tool assemblages, and 26 likely Upper Palaeolithic sites characterised by chipped stone assemblages comparable to the Baradostian industries of the central western Zagros (Rosenberg 2003). Epipalaeolithic occupation in Fars is relatively widespread, but has been the subject of only a limited amount of detailed investigation at sites such as Eshkaft-e Gavi and KMC in the Kur River Basin (Rosenberg 1985; 2003). In total, Rosenberg's systematic survey of Palaeolithic sites in the Kur River Basin outlined the presence of 11 sites with definite late Epipalaeolithic chipped stone assemblages and eight possible Epipalaeolithic sites (Rosenberg 2003: 101). These sites were defined and dated by the presence of characteristic geometric microlith types comparable to (late) Zarzian assemblages known from other regions in the Zagros.

The Neolithic Period

In contrast to the evidence for Epipalaeolithic occupation in the region, aceramic Neolithic sites in Fars are extremely rare or non-existent. Although occasionally reported in earlier surveys, supposed aceramic Neolithic sites in Fars have not been visible when re-surveyed (Sumner 1977)[8].

Neolithic occupation in Fars is only clearly documented from the ceramic Neolithic period onwards. Recorded sites are characterised by the appearance of a number of ceramic industries recognisable by their use of thick, low-fired, chaff-tempered pottery. Examples include the best-studied material from the Kur River Basin sites of Tall-i Mushki and Tall-i Jari, as well as wares known only from survey in other regions of Fars, including Fasa, Darab, Shiraz, and Kazerun (Miroschedji 1972; Sumner 1977).

The relative ordering of the Neolithic ceramic sequence in the Kur River Basin has been the source of much dispute. In his initial characterisation, Vanden Berghe (1954: 400-401) proposed that Jari ware represented the earliest Neolithic occupation in the region, preceding Mushki ware. However, the excavations conducted by the Japanese at Tall-i Mushki and Tall-i Jari A and B have led to the suggestion that Mushki ware is the earliest ceramic Neolithic assemblage in the Kur River Basin, followed by Jari ware (Fukai et al. 1973: 4, 31-34, 76-79; Sumner 1972: 52; Voigt and Dyson 1992: I.135-136).

As illustrated in Figure 1.3, the classic Mushki assemblage is defined by the material recovered from Phases I-V at Tall-i Mushki, whilst the Jari assemblage is defined by the material excavated from Tall-i Jari A Level III (Egami et al. 1977) and from Tall-i Jari B (Maeda 1986). The Jari A3 assemblage appears to be somewhat earlier than the Jari B assemblage, but there are enough comparable pieces to suggest that there was some chronological overlap between the two sites (see Voigt and Dyson 1992: I.137; Alden et al. 2004: 27).

The other decorated soft-ware ceramic traditions that have been recorded in Fars include the so-called Jalyan and Bizdan wares of Fasa and Darab, Kutahi wares from the Shiraz area, and an unnamed ware from Tall-i Morge in the vicinity of Kazerun (Miroschedji 1972; Sumner 1977). Although there is almost a complete absence of relative or absolute dating evidence for most these regions, Sumner has suggested that highly individual regional styles of decoration developed in different areas in Fars contemporaneously with the Jari Phase, and that all of these wares have a common origin in the Mushki ware made by the original inhabitants (Sumner 1972: 255; 1977: 299).

Traditionally, the final phase of the ceramic Neolithic[9] in the Kur River Basin has been defined by pottery from the lower levels at Tall-i Bakun B (Schmidt 1937: 27; 1939: 124; McCown 1942: 23; Egami and Masuda 1962; Alizadeh 2006), and from Tall-i Jari AII (Egami et al. 1977: 7, Pl. 2). Initially referred to as Bakun BI ware, this unpainted soft-ware was renamed 'Shamsabad' ware by Sumner (1972). At Tall-i Bakun B, Shamsabad wares were stratified below painted black-on-buff Bakun wares, whilst at Tall-i Jari A Shamsabad wares were stratified below painted black-on-buff Bakun wares and above painted Jari pottery (Egami and Masuda 1962: 7, Pl. II).

However, the traditional construction of the Neolithic ceramic and chronological development of Fars as Mushki-Jari-Shamsabad is clearly an oversimplification. For example, excavations at Tall-i Jari A3 (Egami et al. 1977), Tall-i Mushki TMB Trench (Fukai et al. 1973: Pls. XXIII-XXIV) and more recently at Toll-e Bashi (Abdi et al. 2003; Bernbeck et al. 2004) have provided good evidence for a ceramic assemblage that is transitional between the classic Mushki and Jari assemblages. This has been labelled "Mushki-Bashi" style by the excavators of Toll-e Bashi (Bernbeck et al. 2004). Moreover, a recently published ceramic assemblage from surface survey at Kushk-e Hezar in the Kur River Basin (Alden et al. 2004) has added an even greater element of complexity to the relative ceramic chronology of the region.

Thus the chronological span of each of these known soft-ware ceramic phases (or sub-phases) is far from clear, and their direct succession is also debatable (Weeks et al. 2006). We are also far from understanding the geographical diversity of Neolithic ceramic assemblages in wider Fars (Miroschedji 1972; Sumner 1977).

Clearly, there is a great deal of work to be done to understand the chronology of Neolithic Fars[10]. The *relative* chronology we have adopted here is very similar to that recently proposed by Alden et al. (2004) for the Kur River Basin. The main difference that we would note for the Mamasani District is in the composition of the Neolithic ceramic assemblages, which will potentially limit our ability to draw direct stylistic and chronological comparisons with other areas in Fars (see Chapter 3.8.2 and Chapter 6.3.1). However, the *absolute* chronology proposed here is significantly different than that proposed by Alden et al. (2004), and reflects the extensive radiocarbon dating programmes undertaken at Tol-e Nurabad and Tol-e Spid (see Chapter 3.7 and Chapter 4.6), Toll-e Bashi (S. Pollock, pers. comm. 2005), and Tall-e Mushki (Alizadeh 2006: Appendix A).

The Bakun Period

The Neolithic soft-wares are succeeded by a variety of painted buff wares, which have traditionally been labelled as Bakun wares after the type site of Tall-i Bakun A, where they were first recovered. These wares appear to have been in use through the 5th millennium BC and are typified by material excavated at the sites of Tall-i Bakun A and B, Tall-i Gap, Tall-i Jari AI and Tall-i Nokhodi (Voigt and Dyson 1992: I.137-140; Alizadeh 2003b; 2006). Bakun painted buff wares are stratified above Neolithic soft-wares at Tall-i Bakun B and Tall-i Jari A, and below Lapui wares at Tall-i Bakun A.

The excavations at Tall-i Bakun A and B, Tall-i Gap, Tall-i Jari AI and Tall-i Nokhodi have been used to construct a relative chronology for the Bakun period that incorporates three sub-phases and relies on a combination of stratigraphic evidence and ceramic attributes, especially painted motifs. However, it should be noted that the stratified ceramic development and thus chronological continuity between these sites is unclear and somewhat disputed. As illustrated in Figure 1.3, the earliest Bakun material is here regarded as that from the upper levels of Tall-i Bakun B (B2) and Tall-i Jari A (A1), and will be referred to as Early Bakun (see Voight and Dyson 1992: I, 138). This is followed by the material from the relatively large exposures at Tall-i Gap (I-IIa), and the uppermost levels at Tall-i Gap (IIb-c) that have produced pottery similar in decoration to material from the lower levels at Tall-i Bakun A (I-II). This will be referred to as Middle Bakun (Voigt and Dyson 1992: I.138-139). Pottery from the uppermost levels of Tall-i Bakun A (III-IV) can be paralleled at Tall-i Nokhodi, and will be referred to as Late Bakun (Voigt and Dyson 1992: I.139-140). A significant piece of evidence for the relative dating of the Bakun sequence in Fars is the similarity between a number of the vessel forms and some decorative motifs seen at Tall-i Bakun A and those from the *massif funeraire* at Susa dated to the Susa I period (compare Vanden Berghe 1959: Figs. 20 and 86; also Delougaz and Kantor 1996: 304; Potts 1999: Figs. 3.3, 3.6; Alizadeh 1992: 25, 57, 59-61; 2003a: 4).

Perhaps more than any other prehistoric period, the differentiation of the internal subdivisions of the Bakun period has suffered from the lack of extensive excavation at a site with a protracted sequence of occupation. If the excavations at Tall-i Jari A, Tall-i Gap and Tall-i Bakun A and B are any guide, it is likely that many of the Bakun period sites were not occupied throughout the 5th millennium BC. However, as yet, no definitive attempt has been made to sub-divide the Bakun sites identified through survey into Early, Middle and Late Bakun phases on the basis of variation in the material recovered from the surface (see Sumner 1994b: 49; also Alizadeh 2006). Sumner has however attempted to identify settlement distributions for Early, Middle and Late Bakun sub-phases or stages, on the basis of the presence or absence of surface material relating to the preceding Shamsabad and/or the succeeding Lapui periods (Sumner 1994b: 49 ff.). This process produces a conjectural pattern of settlement growth and decline in the Kur River Basin that is in much need of solid supporting evidence[11].

It is critical that our understanding of the processes of social and economic development that were taking place during the Bakun period are based on a reliable attribution of sites to specific phases within the Bakun period[12]. For Mamasani, this process will be significantly complicated by the existence of differences between the stratified Bakun period ceramic assemblages in Mamasani and those that have been recorded in the Kur River Basin (see Chapter 3.8.2). However, radiocarbon dates from Tol-e Nurabad and Tol-e Spid provide useful information on the start and end of the Bakun period that has been incorporated into the chronological periodisation shown in Figure 1.3.

The Lapui Period

A new ceramic tradition comprised of two distinctive red wares appears at the end of the Bakun period. Generally referred to as Lapui wares, the fine and common varieties are both typically slipped and burnished and are used to produce a limited range of vessel forms (Sumner 1972: 40-42; 1988b: 25-27)[13].

Lapui ceramic wares were first found in the initial excavations at Tall-i Bakun A, where fragments were recovered from disturbed upper levels (Sumner 1988b: 24, 28; Langsdorff and McCown 1942: 32-33). Although not found associated with a specific structural level, this material was initially labelled Bakun AV ware (McCown 1942: 48; see Langsdorff and McCown 1942: Plates 20-21), which implies that it was stratigraphically distinct from the black-on-buff Bakun wares that characterised Bakun A Phases I-IV (Sumner 1988b: 28). However, Sumner has noted that there are some (equivocal) indications that the red wares co-occurred with the Bakun black-on-buff wares in the uppermost occupation phase at Tall-i Bakun A (IV) (Sumner 1988b: 28; after Langsdorf and McCown 1942: 32; Schmidt 1939). Perhaps more convincingly, the co-occurrence of buff wares and red wares is parallelled at Susa, Tall-i Ghazir, and Tepe Yahya (Sumner 1988b: 28; after Le Brun 1971: 175-176; 1978; Caldwell 1968: 349; Beale 1986: 55-58, 87). Nevertheless, the nature of the stratigraphic relationship between the Late Bakun and Early Lapui ceramic material remains unresolved, as up to the recent work in Mamasani, Lapui ceramics had not been recovered from secure stratigraphic contexts.

Following a similar interpretation to that applied to the Bakun period survey data, Sumner has differentiated Lapui/Bakun, Middle Lapui and Banesh/Lapui stages of occupation in the Kur River Basin (Sumner 1988b: 29, Table 4)[14]. A significant number of sites present evidence for both Bakun and Lapui period occupation, and Sumner has suggested that there was cultural continuity between the two periods (Sumner 1988b: 29-30)[15].

Sumner (1988b: 30) has also proposed that there was cultural continuity between the Lapui period and the subsequent Banesh period. A so-called Terminal Lapui Phase was identified beneath the earliest Banesh layers in the 1x2 m sounding excavated by Alden at Tal-e Kureh (Alden 2003a: 187-188, 195-196)[16]. However, few Terminal Lapui sherds were recovered from the sounding itself, and this led Alden to tentatively characterise this sub-phase using the Lapui fine ware forms that he found on the surface of the site (Alden 2003a: 195-196; 1979: Fig. 52)[17]. The typological differences between the typical Lapui and the Terminal Lapui ceramic assemblages however, emphasise that this continuity needs to be demonstrated rather than assumed (see Chapter 4 below).

The Banesh Period

In the Kur River Basin, the Lapui period ceramic wares are succeeded by the appearance of a range of vegetal and grit-tempered fabrics referred to as Banesh wares, which are best known from the sounding at Tal-e Kureh (Initial and Early Banesh; Alden 1979: 48-50, Fig. 52; 2003a: 187-198, D1-D8) and the Operation ABC, TUV, GHI and By8 excavations at Tal-e Malyan (Middle and Late Banesh; see Sumner 1988a; also Alden 1979; 2003c; Nicholas 1990; Sumner 2003; Miller and Sumner 2004). The widespread use of intentionally added grit temper indicates that there is a marked development from the ceramic technology of the Lapui period (Blackman 1981; 1989: 106), which is accompanied by the introduction of various chaff-tempered and chaff and grit-tempered forms (bevelled-rim bowls, low-sided trays and goblets). A number of these are directly comparable with types known from Susiana and Mesopotamia.

On the basis of his surface surveys, the excavation of the sounding at Tal-e Kureh, and the exposures at Tal-e Malyan, Alden sub-divided the Banesh period into Initial, Early, Early Middle, Late Middle and Late Banesh sub-phases (Alden 1979: 47-52; 2003b; Sumner 2003: 53). In some reviews of the period, Sumner has suggested that this might be simplified to Early, Middle and Late Banesh Phases (Sumner 1986b: 199; 1988a: 317).

As mentioned above, it has been proposed that there was a transition between the Terminal Lapui and Banesh phases, which has been referred to as the Initial Banesh phase (Alden 1979: 152-156; 2003a: 196-198)[18]. This phase is characterised by the appearance of bevelled-rim bowls, but the absence of low-sided trays, incised shoulder decoration and the reserved slip decoration so common in Susiana and Mesopotamia (Alden 2003a: 196-198). Alden initially proposed that the shift from Lapui to Initial Banesh marked the arrival of lowland traders eager to secure control over the importation of numerous highland resources (Alden 1979: 157; 1982: 620, 621).

The Early Banesh phase is marked by the appearance of distinctive Banesh goblets and trays (Alden 1979: 50) specialised grit-tempered ceramic production at two sites, one of which was Tal-e Kureh (Alden 1979: 160), and the foundation of the production and redistribution site known as Tal-e Qarib (Alden 1979: 50, 160; Sumner 1986b: 200).

The Early Middle Banesh phase is distinguished by the foundation of Tal-e Malyan, which begins as a town and then grows to become a major regional urban centre in the Late Middle Banesh phase (Alden 1979: 165-166). The Early and Late Middle Banesh phases are difficult to differentiate on ceramic criteria (Alden 1979: 50-51), but Operation ABC BLs 4B and 5 and TUV BL 3B have been assigned to the Early Middle sub-phase, while ABC BLs 2, 3, and 4A, and TUV BLs 2 and 3A have been assigned to the Late Middle phase (Sumner 2003: 53).

It is during the Late Middle Banesh phase that Tal-e Malyan is felt to achieve urban status, growing to c.45-50 ha in size, and there is evidence for specialised craft production, monumental architecture, and Proto-Elamite or Susa III pictographic tablets, seals and sealings, attesting to the operation of a complex administrative system (Sumner 2003: 113-117). There are broad similarities between some aspects of the material assemblages of Tal-e Malyan in this phase and those observed at Susa (Acropole I: 16-14B), Tepe Sialk (IV_2), Tal-e Ghazir (Lvl. 38-36), and Tepe Yahya (IVC2) (Voigt and Dyson 1992: I.131ff; Potts 1999: 81-83; also Chapter 4.7.2, n.18).

Alden has pointed out that there is little that can be said about the Late Banesh phase because only one grit-tempered ceramic production site has been identified, and it is difficult to establish more specific chronological markers for this phase that is twice as long as any of the earlier phases (Alden 1979: 168). Although there is evidence that the occupied area at Tal-e Malyan reduced, it was during this period that the fortification wall was constructed around the site, suggesting that the site remained populous for at least some of the Late Banesh period (Sumner 2003: 117).

Until relatively recently, it has been strongly emphasised that there was a chronological hiatus in the Kur River Basin between the end of the Late Banesh period (c.28/2600 BC) and the beginning of the Kaftari period at c.2200 BC (e.g. Sumner 1988a: 315-316, 317; 2003: 53-55). This suggestion was primarily based on the evidence for an episode of erosion ‘of considerable duration’ in Operation ABC at Tal-e Malyan, the radiocarbon dates for the Banesh and Kaftari period occupation at Tal-e Malyan, discontinuity in settlement locations between the periods, and the apparent stylistic gap in the Kur River Basin ceramic sequence (Sumner 1988a: 315-316; 2003: 54-55). However, the recent publication of the results from the H5 sounding (Miller and Sumner 2004), and the newly excavated H1s sounding (Alden et al. 2005: 41-42) at Tal-e Malyan indicate that there is some evidence for continued occupation at the site between the two periods, even if there is a decline in the sedentary population of the Kur River Basin between c.2800 and 2200 BC (Miller and Sumner 2004: 87-88).

The Kaftari Period

At some point prior to c.2200 BC, so-called Kaftari painted chaff-tempered and red-slipped wares began to be used in the Kur River Basin. This phase is primarily known from surface surveys in the Kur River Basin (Vanden Berghe 1954; Sumner 1972: Pl. XXIII-XXXVI; 1989), and the excavations carried out at Tal-e Malyan (Alden et al. 2005; Miller 1991; Miller and Sumner 2004; Nickerson 1983; 1991; Sumner 1974; 1988a; 2003: 52-54; Zeder 1991; also Hansman 1972; Reiner 1973). Kaftari ceramic material has also been found in excavations at Tol-e Nokhodi and Tall-i Zohak in Fars, Tol-e Peytul in Bushehr, and at various sites on the southern side of the Persian Gulf (see Potts 2003; Carter, R. 2003; Petrie et al. 2005).

The evidence from the H5 and H1s soundings at Tal-e Malyan (see above) suggests that the ‘fully articulated Kaftari assemblage’ (c.2200 and 1600 BC), developed at some point after the Late Banesh period, when there was a widespread depopulation of the Kur River Basin (Miller and Sumner 2004: 87-88; Sumner 2003: 54-55; Alden et al. 2005). There is evidence from the cemetery at Jalyan that painted chaff-tempered ceramics were in use elsewhere in Fars before c.2200 BC (Miroschedji 1974; 2003), suggested by the strong parallels that this material has with Susa IVA and Godin III material (Carter, E. 1980; Henricksen, R. 1986; Sumner 2003: 54). Sumner and Miller have proposed that the origins of the Kaftari ceramic assemblage lie with a small sedentary population who inhabited a restricted area of Tal-e Malyan before 2200 BC (Sumner 2003: 54-55; Miller and Sumner 2004: 87-88).

In addition to the two soundings, examples of the fully articulated Kaftari ceramic assemblage have been found in numerous Operations at Tal-e Malyan (see Sumner 1988a: 314-318). In characterising Kaftari period settlement and land use in the Kur River Basin, Sumner has divided the Kaftari period into three stages, Early (2200-1900 BC), Middle (1900-1800 BC) and Late (1800-1600 BC) (Sumner 1989: Table 4), and this relative chronology roughly correlates with the radiocarbon chronology from the site (see Petrie et al. 2005: Table 3, Figs. 6-7).

The most comprehensive collection of Kaftari period ceramic material from Tal-e Malyan that is currently available was presented by Nickerson in his PhD dissertation (1983). Nickerson has proposed that during the Kaftari period, there was a progressive decrease in the proportions of red-slipped ware in comparison with Kaftari painted buff-ware, and he used this as a means of seriating the excavated strata (Nickerson 1983: 194-198, Table 19). This pattern has also been observed in the recently excavated H1s sounding (Alden et al. 2005: 41-42). Expanding from this observation, Sumner suggested that the upper levels of occupation at Tol-e Nokhodi date to the Early Kaftari period due to the particularly high levels of red-slipped ware recovered (Sumner 1989: 139).

Although it was not a component of Nickerson’s analysis, it has proven possible to make some preliminary separation of the Kaftari ceramic material from Tal-e Malyan into Early, Middle and Late assemblages (Petrie et al. 2005: Figures 3-5). The best parallels for the Middle and Late Kaftari ceramic assemblages from Tal-e Malyan are with Susa VA and VB material, particularly the material from the so-called Sukkalmah period levels (see Carter, E. 1979: 122-123). This correlates somewhat with the historical records of this period, which refer to Kings of Anshan and Susa, and suggest that there was a degree of political unity across the southwest of Iran at this time (see Potts 1999: 156-157; also Potts in press a).

The Mid-Late 2nd millennium BC

Evidence for post-Kaftari occupation at Tal-e Malyan is more limited, and precisely what transpires at the end of the Kaftari period (c.1600 BC) has not yet been clearly established through excavations. The next well dated occupation deposits are the Middle Elamite levels (c.1250-1000 BC) discovered in Operation EDD (BLs 3-4; Carter, E. 1984: 172-173; 1992: 295-296; 1996), but there is evidence for occupation dating to the intervening period.

Occupation levels at the top of Operation GHI (BLs I and II), deposits in Test Trench D (Strata 5-6) and Operation XX (BL 1), and the upper level wells in Operation ABC (Strata 1-4), produced a mixture of Kaftari and so-called Qaleh painted ware ceramics (Nickerson 1983: Table 19; Carter, E. 1984: 172; Sumner 1988a: 309, 312-313; 2003: Table 12). Initially characterised by Vanden Berghe (1954: 403; also Haerinck and Overlaet 2003), Qaleh painted wares appear in similar vessel forms to painted Kaftari wares and utilise many of the same decorative patterns, although motifs tend to be smaller and more restricted in their placement (Carter, E. 1984: 174; 1992: 296; also Sumner 1972: Pl. XXXVII).

The appearance of Qaleh ware together with Kaftari ceramics in upper levels of Operations GHI, ABC, XX and TTD suggests that stratigraphically, Qaleh wares first appear during the late Kaftari period or in the period between the Kaftari and Middle Elamite phases (Carter, E. 1984: 172-173; 1992: 295-296). Qaleh wares were also found together with Middle Elamite buff wares in Operation EDD levels IV-IIIA, indicating that they continued to be used into the Middle Elamite period, up to at least c.1000 BC, and possibly c.900-800 BC (Carter, E. 1984: 174; 1992: 296; 1996: 25-27, 49-51).

The Middle Elamite buff ware forms that dominate the assemblage from EDD have good parallels with the Middle Elamite II and III forms from Susiana, and are typically described as having ‘a close resemblance to the lowland assemblages’ (Carter, E. 1992: 296; 1996: 29-30). However, Carter, E. (1996: 30) has cautioned against reading too much into changes in the assemblage composition over time, due to issues of deposit formation and because the analysis of this ceramic material was not detailed. That both Qaleh and undecorated buff wares were being produced at Tal-e Malyan is emphasised by the discovery of at least four kilns that revealed evidence of Qaleh and plain ware production in EE39 and five kilns with evidence for the manufacture of Qaleh-ware in Operation BB33, which is close to EDD and appears to be contemporaneous with the Middle Elamite occupation there (Sumner 1988a: 311-312; Carter, E. 1996: 37-39). It is notable that Tal-e Malyan is the only site in the Kur River Basin that has produced evidence for the usage of lowland ceramic types during this period (Carter, E. 1996: 30; after Jacobs 1980).

There are two additional painted ware traditions that appear in Fars during the later 2nd millennium BC, commonly known as Shogha and Teimuran wares. Both were initially identified by Vanden Berghe (1954: 404), who suggested that Shogha ware was the earlier of the two (also Sumner 1972: Pl. XXXVIII-XL, Pl. XLI; Overlaet 1997). These wares are best known from the excavations conducted at Darvazeh Tepe, which also produced small quantities of Qaleh ware (Carter, E. 1992: 296; after Jacobs 1980: 60).

Shogha ware vessels are hand made and grit-tempered, and sometimes have an exterior slip of buff or red and painted black decoration comprised of combinations of horizontal lines and trees, animals, and stars (Jacobs 1980: 63-79; Carter, E. 1984: 175; 1992: 296). In contrast, Teimuran ware vessels are harder, wheel-made and grit-tempered, with a slip and geometric designs comprised of horizontal lines and often solid triangles (Jacobs 1980: 79-83; Carter, E. 1984: 175; 1992: 296).

In his initial analysis of settlements in the Kur River Basin, Sumner attributed the Shogha and Teimuran material to one phase, arguing that the stratigraphic relationship between the two wares reported by Vanden Berghe was questionable (Sumner 1972: 62; also Jacobs 1980: 57). Despite the extensive excavations at Darvazeh Tepe, it has not been possible to resolve the issue of the relative chronology of Shogha and Teimuran wares. However, the appearance of Qaleh ware together with fragments of Shogha and Teimuran wares in all but the lowest level at the site suggests that these three wares were broadly contemporaneous (Carter, E. 1992: 296; Jacobs 1980: 115-119, 169). In addition, Sumner has argued that Teimuran ware was more popular at the end of this phase (1994: 101).

In absolute terms, Jacobs has argued that Darvazeh Tepe was occupied between 1800 and 900 BC (Jacobs 1980: 48-52, 115-119), but Sumner has suggested that this range should be limited so that the Shogha Teimuran phase begins between 1600 and 1300 and continues to c.900 BC (Sumner 1994a: 101). Sumner (1994: 103) has also proposed that this Shogha and Teimuran ceramic material might be related to the arrival of the first Persians in the Kur River Basin.

The Early 1st millennium BC

Very little is known about the archaeology of Fars during the early 1st millennium BC (e.g. Carter, E. 1994: 65-67; Potts 1999: 285-286). Apart from the likelihood that the Shogha and Teimuran assemblages continued in use until c.900 BC, there are no excavated occupation deposits that date between then and c.520 BC. Sumner has suggested that the use of the Shogha and Teimuran assemblages may have continued until 800-700 BC (1986a: 4; 1994a: 103), but this is only speculative (Sumner 1994a: 103-105; Boucharlat 2003: 263). However, the absence of well dated evidence for widespread occupation in the Kur River Basin between 900-600 BC may well be a reflection of the lack of excavation of relevant deposits or sites rather than their non-existence.

Due to the absence of evidence from surface surveys and excavations, it has generally been hypothesised that there was a hiatus in occupation at Tal-e Malyan between c.1000–600 BC, following the abandonment of the EDD period IIIA structures (Sumner 2003: Table 12). A later grave, containing three hand-made ceramic vessels, that was excavated in Operation EDD (Burial 47) appears to be post Middle Elamite and pre-Achaemenid in date (Carter, E. 1994: 66, Fig. 3; 1996: 47, 51, Fig. 45; also Potts 1999: 285-286). The hand-made ceramic vessels and the fragments from similar hand made forms from the surface of the site are different to Neo-Elamite forms from Susiana, and led to the suggestion that this grave provides indirect evidence for the use of the region by a mostly nomadic population in the early 1st millennium

BC, and also marks an end to the Elamite ceramic traditions and the rupture of cultural ties with Susiana (Carter, E. 1994: 66; 1996: 51; Miroschedji 2003: 35).

Outside of the Kur River Basin, Carter has identified Neo-Elamite occupation at Tepe Bormi and Tal-e Ghazir and several other sites on the Ram Hormuz Plain, and the identification of this material mark the eastern-most appearance of Neo-Elamite ceramic material that is typified at Susa (Carter, E. 1994: 68-72, Figs. 4-13; also Wright and Carter, E. 2003). There is also the late Neo-Elamite tomb at Arjan (Alizadeh 1985; Potts 1999: 303-304; Stronach 2003; 2005; Alvarez-Mon 2004), whose existence suggests that there were individuals with significant status in the intermontane valleys between Susa and Anshan. Lastly, it should be mentioned that there is evidence for the addition of the figures of a king and queen to the Kaftari/*Sukkalmah* period relief at Naqsh-i Rustam at this time (Seidl 1986: Tf. 14-15; Sumner 1994a: 99; Miroschedji 2003: 35), and it has also been suggested that during this period, figures were also added adjacent to the main relief at Kurangun (Vanden Berghe 1984: 29; 1986: 162-163; Potts 2004; in press a; *contra* Seidl 1986: 12; Miroschedji 1981b; 1989; 2003: 33). Although no decisive evidence from excavations has yet been revealed at either site, if the dating of the modifications to either relief is correct, then it suggests that highland Fars was still within the Neo-Elamite sphere of interaction.

It is important to note that in his initial characterisation of the Marv Dasht cultural sequence, Vanden Berghe identified a so-called Teimuran B ware vessel in a grave at Tall-e Teimuran (see Jacobs 1980: 59). This spouted vessel appears to be intrusive, and is one of a number of stray finds that date to this period and appear to be foreign to the region (Sumner 1994a: 101). Jacobs has suggested that this ware might in fact be related to the southward migrations of the Persians at the end of the 2nd and early 1st millennia BC (Jacobs 1980: 59).

The Achaemenid Period

At some point during the mid-1st millennium BC, a new ceramic assemblage appears in the Kur River Basin. The appearance of this so-called “Late Plain Ware” assemblage, characterised by the appearance of a range of distinctive shapes and a complete absence of painted forms, marks a break in the cultural sequence (Sumner 1972: 267-270; Boucharlat 2003: 261-263). Vessels appear in a range of colours from buff to brown and grey, and are typically smoothed and sometimes burnished and/or slipped (Boucharlat and Haerinck 1992a: 303)[19].

Late Plain Ware is known in Fars from various excavations at Persepolis (e.g. Schmidt 1957; Asgari Chaverdi 2004) and also from the Tall-i Takht at Pasargadae (Stronach 1978: Figs. 106-124). The dating of the first appearance of the Late Plain Ware ceramic assemblage is unclear. The best dated collections from Pasargadae and Persepolis all come from either Late Achaemenid or Post-Achaemenid deposits (i.e. the 4th and 3rd centuries BC and later), and some lack clear stratigraphic context (see Sumner 1986a: 3-4; also Boucharlat and Haerinck 1992a: 303)[20]. However, while the stratigraphic evidence suggests that the Late Plain Ware assemblage dates from the 4th-3rd centuries onwards, Sumner has proposed that it first appears at the beginning of the Achaemenid period in the 6th century BC (Sumner 1972: 64; 1986a: 4; 1994: 103). Boucharlat (2003: 262-263) has pointed out that it is important to differentiate between the date of the rise of Cyrus II (c.550 BC) and the usurpation of the throne by Darius (c.520 BC) as the key chronological marker, and suggests that Late Plain Ware most probably first appeared with the latter c.520 BC, contemporaneous with the founding of Persepolis[21]. Prior to the excavations at Tol-e Spid, there were no excavated assemblages that can be unequivocally dated to the Early Achaemenid period (see Sumner 1986a: 3-4; Boucharlat and Haerinck 1992a: 303).

Although there is evidence for Persians living in Khuzestan before the rise of the Achaemenids, Boucharlat has noted that there was no visible change from the Neo-Elamite ceramic assemblage until Susa was taken over by Darius in c.520 BC (Boucharlat 2003: 263). The assemblages from Susiana after c.520 BC are however, differentiated from those in Fars, being marked by the appearance of distinctive glazed and eggshell wares (Boucharlat and Haerinck 1992a: 301-303), which are comparable to contemporaneous material from sites in Mesopotamia (Miroschedji et al. 1987: 32ff.).

The Post Achaemenid Periods

The ceramic assemblages in use in Fars during the Post-Achaemenid period (323 BC - AD 224) are not well understood, and have proven difficult to differentiate from those of the Late Achaemenid period. The available archaeological evidence suggests that there is little uniformity in the ceramic assemblages of Iran as a whole at this time, and the vast majority clearly belong to local traditions (Boucharlat and Haerinck 1992b: 306; see Haerinck 1983: 238-257; Hannestad 1983: 107-120). This seems to correlate with the evidence for political autonomy in southwestern Iran during the periods of Seleucid and Parthian rule (see Potts 1999: 354-408).

While the ceramic material from Fars appears to be broadly homogenous, there is a lack of well stratified material from excavations. Vessels appear to be similar to Achaemenid forms, and although red-slipped and painted wares begin to appear, and glazed ceramics are infrequent, Alexander’s conquest did not appear to dramatically affect pottery styles (Boucharlat 2003: 262; also Boucharlat and Haerinck 1992b: 306).

Prior to the excavations at Tol-e Spid, the best dated Post-Achaemenid material in Fars was excavated from Pasargadae and Qasr-i Abu-Nasr[22] (Stronach 1978; Haerinck 1983: 232-237; Sumner 1986a: 3-4: Boucharlat and Haerinck 1992b: 306). Post-Achaemenid or Parthian period occupation at Tal-e Malyan is represented by coins recovered from graves excavated in Operations Z46 and GHI (Sumner 1988a: Table 314-315, 318; 2003: Table 12), and material is also known from the excavations at Bard-i Nishandeh, Masjid-i Suleiman, and Susa in

Khuzestan (see Boucharlat and Haerinck 1992a: 304; Haerinck 1983: 18-87).

The Sasanian and Islamic Periods

Following the political fragmentation of the Post-Achaemenid period, the Sasanian period (AD 224-642) sees the unification of most of Iran, and the annexation of other surrounding regions. There is less diversity in the ceramic assemblages of this period, but some regional differences are still apparent (Boucharlat and Haerinck 1992b: 307).

Although many of the largest and most important Sasanian sites are located in Fars, there is virtually no ceramic material published from many of these sites. The best known Sasanian period ceramic assemblages are from Firuzabad, Hajjiabad, and Qasr-i Abu Nasr, while there is nothing yet published about the material from Istakhr, Naqsh-i Rustam or Bishapur (Boucharlat and Haerinck 1992b: 307). This means that the known corpus of Sasanian ceramics is relatively limited (Boucharlat and Haerinck 1992b: 306; also Huff 1991).

It has been difficult to clearly differentiate Early, Middle and Late phases for the Sasanian period ceramics, but they can be broadly characterised by the material from Qaleh-i Dokhtar at Firuzabad (3rd-4th centuries AD; Huff and Gignoux 1978), Hajjiabad (4th-5th centuries AD; Azarnoush 1994), and Qasr-i Abu Nasr (6th-8th centuries AD; Whitcomb 1985: 111-153) (Simpson peers. comm. 09/2005). The overall corpus can be divided into three groups, a greenish cream ware with combed decoration, a dark-grey-buff ware with incised decoration on the shoulder and a buff or black ware with raised ‘barbotine’ decoration (Boucharlat and Haerinck 1992b: 307). Sasanian period occupation at Tal-e Malyan is represented by coins recovered from graves excavated in Operation TUV, and also material seen in Operations EDD, A63, Test Trench D, which includes a kiln excavated in Operation X65 (Sumner 1988a: 314-315; 2003: Table 12; also Alden 1978). Significant quantities of Sasanian ceramic material has also been found on the surface of the site, and on 36 other sites in the Kur River Basin (Sumner 1988a: 314-315; 2003: Table 12; also Alden 1978).

A great deal is known about the ceramics and ceramic production in the Islamic period in Iran, and much of the research has focussed on the glazed wares produced at sites such as Siraf, and imported wares that have widespread distributions. The Islamic period is generally divided into Early (7th-11th centuries AD), Middle (11th-15th centuries AD) and Late (16th-19th centuries AD), and each is marked by distinctive ceramic wares (see Whitehouse 1992; Grube 1992; Crowe 1992).

The most detailed information about Early Islamic (7th-11th centuries AD) ceramic chronology in Iran has been derived from excavations at Susa in Khuzestan and Siraf in southern Fars, and also Nishapur and Sirjan on the northern and southern parts of the plateau respectively (summarised with references in Whitehouse 1992: 309-311). While the material from Susa and Siraf are relatively well dated, the material from Nishapur and Sirjan can only be precisely dated through cross-correlation with material from Lashkari Bazar in Afghanistan (Whitehouse 1992: 309-310).

A range of ceramic wares were produced that can readily be attributed to the Middle Islamic period (11th-15th centuries AD), but in many instances, there is little evidence for the precise dating of the material within the period (Grube 1992: 311). Earthen wares produced at this time include a variety of incised and slip-carved glazed wares, including sgraffiato ware, and incised, carved and moulded unglazed wares (Grube 1992: 311-312). The technology for producing frit ware developed during this period, and production in Iran appears to have been concentrated at Kashan, and also possibly at a number of other locations (Grube 1992: 313). Frit wares were used to make a range of monochrome glazed, slip carved, underglaze-painted, lustre-painted and overglaze polychrome-painted ware types (summarised in Grube 1992: 314-318). Most ware types appear to continue being produced after the Mongol invasions in the early 13th century AD, but eastern iconography becomes more common, and attempts are made to imitate celadon (see Grube 1992: 318-322). Blue and white ware appears to have been developed during the Timurid period (post AD 1335), inspired by Chinese models (Grube 1992: 322).

The Late Islamic period (16th-19th centuries AD) is marked by the rise of the Safavids. Although travellers reported the production of ceramics in Shiraz, Mashad, Yazd, Zarand and Kerman, it has not been possible to attribute specific material to any one centre (Crowe 1992: 327). Ceramic technology remains essentially unchanged, and the distribution of Chinese celadons and porcelains results in the continued manufacture of imitations in Persian blue and white frit ware (Crowe 1992: 328). At the end of the period, British and European ceramics are also evident (Crowe 1992: 330).

1.5. Summary and Outline of Chapters

The reviews presented above are intended to emphasise that, although archaeologists have investigated sites spanning virtually the entire prehistoric and historic sequence of Fars, this research has been geographically biased towards particular sub-regions. Specifically, the overwhelming focus on the Kur River Basin has allowed for a detailed archaeological knowledge of this area at the expense of our understanding of adjacent highland districts such as Mamasani, Kazerun, Fasa, Darab, and the Shiraz plain. These regions remain poorly understood from an archaeological point of view, despite sporadic exploration which stretches, at least in the case of Mamasani, as far back as the early 19th Century.

Important research questions remain unresolved due to a lack of appropriate evidence from these areas, and the opportunity to carry out a new research programme in an area of southwest Iran that has not hitherto been systematically provides a unique chance to address many of these outstanding issues. The research presented in this volume provides the first indications of what the archaeological record of Mamasani has to contribute to the understanding of the processes of cultural development in this part of Western Asia from prehistory to the Islamic period.

The broad sketch of the relative and absolute chronology of Fars from the Palaeolithic to the Late Islamic period outlined above has defined the basic chronological and terminological parameters for the discussion of the archaeological evidence from the Mamasani District presented in the following chapters. Following this introductory chapter, a review of the landscape and environment of the southwestern Iran is presented in Chapter 2, which focuses on the nature of the natural and human geography of the Mamasani District. Chapters 3 and 4 present the results of the excavations at Tol-e Nurabad and Tol-e Spid, respectively, describing the sites and their surroundings; their stratigraphy, architecture and phasing; the ceramic, chipped stone and small find assemblages; the faunal and botanical samples; radiocarbon determinations; and the significance of the excavated archaeological sequences. In Chapter 5, the faunal remains collected from the Tol-e Nurabad and the Tol-e Spid soundings are discussed. In Chapter 6, the preliminary survey of Dasht-e Rostam-e Yek and Dasht-e Rostam-e Do is presented, including an assessment of chronological changes in settlement frequency and distribution and a site gazetteer. Finally, Chapter 7 presents a summation of the significance of the cultural sequence of Mamasani as it can be reconstructed from the excavations and survey, contextualised by an assessment of the relationship that this sequence has for broader archaeological issues. The chapter concludes with a discussion of potential avenues for future research in Mamasani.

Notes

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[1] Also visit the Exploring Routes and Plains in Southwest Iran page at: http://www.archatlas.dept.shef.ac.uk/

[2] According to Hansman (1972: 118), another version of this text calls Huhnur the 'Bolt to the land of Elam'. Hansman pointed out that when travelling from Susa, one would consider this region to be the Key or Bolt to Anshan, while when travelling from Anshan to Susa, one could consider it to be the Key or Bolt to Elam (Hansman 1972: 118).

[3] The texts that mention a 'king of Huhnuri' are H.T. 29, 30 and 72 (Herrero and Glassner 1990: 14; Glassner 1991: 18; Potts 1999: 205).

[4] The notebooks and photographs from this latter visit are today amongst the Ernst Herzfeld Papers in the Arthur M. Sackler Gallery Archives, Freer Gallery of Art,, Washington D.C.

[5] Both Jinjan (Tappeh Servan) and Dau-o Dokhtar are discussed further in Chapter 6.3-4.

[6] The text of this inscription has been translated as follows: "Oh Kilahshupir, I (am) Shilhak-Inshushinak, son of Shutruk-Nahhunte, enlarger of the realm. For my life, the life of Nahhunte-utu, my chosen wife, the life of our descendants and in order to have further children, therefore…" (König 1965: 94).

[7] Stein (1940: 29) noted that this gatehouse was known as Darwazeh-shutur-khabz.

[8] This gap in the settlement history of Fars may recently have been filled by the salvage excavations undertaken as part of the Sivand Dam Project in 2005. A cave site in the Tang-i Bulaghi investigated by a collaborative Iranian/Japanese team appears to have provided the first evidence for aceramic Neolithic occupation in highland Fars (Tsuneki et al. 2006). Despite these findings, the possibility remains that there was a substantial gap between the latest Epipalaeolithic occupation in Fars and the earliest Neolithic settlement of the region, although the available evidence is far from conclusive.

[9] In contrast, Alizadeh (2006) defines this period as the first stage of the 'Middle Fars' period rather than the last stage of the 'Archaic Fars' period.

[10] This entire Neolithic sequence has recently been thrown into question by Abbas Alizadeh (2004; 2006; Alizadeh et al. 2004). After re-excavating the sites of Tall-i Mushki, Tall-i Jari A and B and Tall-i Bakun A and B, Alizadeh has proposed a complete reversal of the commonly held view of the relative chronology of ceramic assemblages in Neolithic Fars. Rather than the general Mushki-Jari-Shamsabad progression (however simplistic), Alizadeh (2004: 6; Alizadeh et al. 2004) has posited a Shamsabad-Jari-Mushki progression, earliest to latest.

This reconstruction will not be adopted in this volume, as there are a number of theoretical and practical objections to the proposed ordering of the sequence. This decision has been endorsed with the publication of radiocarbon dates from the recent excavations, which demonstrate that the Mushki-Jari-Shamsabad progression is correct (Alizadeh 2006: Appendix A, Tables 9-11).

The theoretical and practical reasons beyond the confirmation from the radiocarbon dates are as follows. Firstly, the few parallels outside of Fars that do exist for the pottery of the Mushki period come from Qaleh Rostam II in the Bakhtiari mountains (Nissen and Zagarell 1976: Fig. 6.1), and Tepe Guran in the central western Zagros (Meldgaard et al. 1963: Fig. 15). These parallels suggest that if both Jari *and* Shamsabad wares are earlier than Mushki wares, they must represent an extremely early stage in the sequence of Neolithic ceramic industries in western Iran.

Secondly, Maeda's (1986) analysis of decorative motifs on the excavated pottery from Tall-i Jari B suggests a quantifiable progression of motif frequency from the lowest levels of the site to the highest. Maeda's conclusions are summarised into ten decorative motifs whose varying frequency characterises chronological development at the site: sherds with individual examples of these ten motifs are illustrated by Maeda and usefully grouped in their order of chronological progression by Alden et al. (2004: Fig. 4). One need only imagine a typical Mushki painted sherd with "line and terminal dot" decoration at either end of the motif progression to see that the Mushki ceramic assemblage is more likely to precede the Tall-i Jari B ceramic sequence than to follow it.

Thirdly, the results of archaeological site survey in the Kur River Basin must be considered. The work of Sumner and Alden (summarised in Sumner 1990b: Tab. 2) has documented a total of eight sites with Mushki pottery, 50 with Jari pottery, 108 with Shamsabad pottery, and 175 with Bakun pottery. If Mushki is earlier than Jari and Shamsabad, this pattern suggests a relatively small-scale occupation of the region in the Mushki period, followed by expansion of settlement and population into the Bakun period. This expansion can be linked with agricultural production strategies, as the location of Mushki and Jari settlements suggests reliance on springs and areas of high ground water for agricultural production, whereas settlement patterns in the Shamsabad period suggest the use of larger scale irrigation to support agricultural crops (Sumner 1994b: 52). Alternatively, if Alizadeh's revised relative chronology was correct, we would have an intense initial colonisation of the region by irrigation agriculturalists, followed by steadily declining settlement and a population who come to rely more and more upon simple watering systems, before a second explosion of human occupation in the Bakun period.

A fourth line of reasoning to consider is the distribution of different pottery types within Fars: Mushki-type pottery appears to be the most widespread throughout the region, whilst other Neolithic ceramic types are much more geographically confined. This situation can be modelled in the conventional chronology as the low-intensity but widespread colonisation of Fars by groups who used Mushki pottery, followed by the development of increasingly sedentary populations in the various intermontane valleys of Fars and the subsequent rise of regionally-specific ceramic industries (Sumner 1977). With a "Mushki latest" chronology we must envision a dwindling Kur River Basin population in the Mushki period as exporters of a widespread ceramic phenomenon to neighbouring regions of Fars, or as colonists.

In addition to these more "theoretical" objections to the Neolithic chronology initially reconstructed by Alizadeh, the evidence from his recent re-excavations must also be scrutinised in more detail. Significantly, the re-excavations at Tall-i Jari A and B, and Tall-i Bakun B in no way contradict the relative chronology proposed by the Japanese expeditions. At Tall-i Jari B, the results of Alizadeh's excavations were exactly the same as those of the Japanese team – a great deal of stratified painted Jari pottery was recovered (surface survey revealed plain and painted pottery but excavated deposits contained "no traces of occupation datable to either the Bakun B2/Gap phases with painted buff pottery or to the Bakun B1 phase with only a coarse plain buff and pink ware" [Alizadeh 2004: 6]). Likewise, at Tall-i Bakun B, plain chaff-tempered "Bakun B1" pottery was found stratified below Bakun painted buff wares by both excavations. Moreover, at Tall-i Jari A plain Shamsabad (=Bakun B1) pottery was found stratified beneath Bakun painted buff wares by both the Japanese and Iranian excavations.

The main difference is that during the re-excavations at Tall-i Jari A, Jari painted pottery was not found stratified beneath Shamsabad pottery as claimed by the Japanese excavations. It may be that virgin soil was not actually reached in the recent excavations, or perhaps the earliest occupation of the site extended over a smaller area than the later occupation. Regardless, the re-excavations at Tall-i Jari A provide no stratigraphic evidence whatsoever attesting to the relative chronology of these two wares. Nevertheless, Alizadeh argued for the chronological priority of Shamsabad/Bakun B1 over Jari painted pottery. He suggested that Shamsabad/Bakun B1 pottery "may represent the earliest phase of the Neolithic occupation in the region and that it was followed first by Jari B (with painted buff)". His claim is based on the fact that "at Jari A, a progression towards a finer buff ware sometimes has the white slip/wash signature of the typical Jari painted pottery. Almost all of the finer pieces are plain, but towards the end of the sequence; simple vertical or horizontal bands painted in dark appear on some examples" (Alizadeh 2004: 6). Whilst it is possible that this represents an artistic and technological development leading into the production of Jari painted ceramics, it could also feasibly represent the development of artistic and technological traditions leading to the production of Bakun B2 painted buff wares. As yet, no stratigraphic evidence has been published that enables a discrimination between the two possibilities.

The most important of the sites re-excavated by Alizadeh is Tall-i Mushki, where "the stratified materials indicate that Mushki red burnished painted ware developed out of Jari B painted buff ware" (Alizadeh 2004: 6). The possibility of residual material appearing in later deposits, and thus confusing the picture of the progression of ceramic styles, is always present. Alizadeh (2004: 6) has also stated that "the most important finding was the presence of a class of pottery in the lowest levels of the site that while painted with typical Mushki designs, the ware was typical of Jari B, that is, a soft, straw/chaff-tempered buff ware with a cream white wash, as well as some genuine Jari B potsherds". However, the sherd illustrated by Alizadeh (2004: Fig. 8) in support of this claim has a decorative scheme well known from excavations at Toll-e Bashi, where it has been termed the "Mushki-Bashi style". Such pottery characterises the earliest occupation levels at Toll-e Bashi (Bernbeck et al. 2004: 77), and as the name suggests clearly appears to have derived from the Mushki style. Other sherds described by Alizadeh (2004: Fig. 7 caption) as "typical Jari painted pottery" also fall into the category of Mushki-Bashi pottery, and similar material was recorded in the initial Japanese TMB trench excavations at Tall-i Mushki (Fukai et al. 1973: Pls. XXIII-XXIV), where it was regarded as occupying a later stratigraphic position than standard Mushki wares of Phase I-V.

In conclusion, whilst none of the reconstructions suggested above on the basis of the revised Alizadeh chronology are impossible, in critical respects they seem less probable than the reconstructions based upon a "Mushki earliest" relative chronology for Fars. Alizadeh's initial revised chronology requires a series of unlikely socio-economic and technological developments in the human occupation of Fars from the mid-Holocene. Moreover, sites which previously showed occupation in successive periods and consistent internal development now have "a large temporal gap" (Alizadeh 2004: 6) inserted at various points in their stratigraphic sequences. More traditional interpretations of the relative ceramic chronology of Fars are equally supported by the excavated evidence, and do not require as many unlikely events. As noted above, the likelihood of the

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more traditional interpretation has been upheld by the absolute dating evidence (Alizadeh 2006).

[11] Following this system of attribution, a site with evidence for Shamsabad and Bakun period occupation on the surface is envisaged as being occupied in the Early Shamsabad, Early Bakun and Middle Bakun phases. If the site also had evidence for Lapui period occupation, then it would also be envisaged as being occupied during the Late Bakun, Bakun/Lapui and Middle Lapui phases. If a site only had evidence for Bakun and Lapui material, then it was presumably only occupied during the Late Bakun, Bakun/Lapui and Middle Lapui phases (see Sumner 1988b; 1994: 49). This approach is far from ideal, as it makes assumptions about sub-phases of occupation based on the presence or absence of material that indicates other phases of occupation at the site, rather than assessing the chronological variability of the Bakun pottery found on the surface. It also assumes that where there are consecutive phases of occupation evident in the surface collections, occupation at the site was continuous between those phases.

[12] This debate over attributions has significant implications for our comprehension of developments in socio-economic complexity that took place in Fars during the later 5th millennium BC. The excavation of the Late Bakun phase deposits at Tall-i Bakun A revealed evidence for specialised ceramic production and the use of seals, the latter of which at the least suggest the acknowledgement of the ownership of individual property and at most the existence of a complex centralised administration (see Langsdorff and McCown 1942; Alizadeh 1988; 1994; 2004; 2006; Sumner 1994b: 60-62). Alizadeh has proposed a model that suggests that Tall-i Bakun A provides evidence for complex pre-state formations based on mobile-pastoralism (Alizadeh 2006) (see Section 6.3). Relying primarily on the presence of evidence for administrative technology at Tall-i Bakun A, he has proposed that the site was an administrative centre that was dominated by a mobile pastoral elite, and that horizontal mobile pastoralism can achieve a level of state organisation through economic diversity (Alizadeh 2006). He suggests that with the rise of political hegemony during the Late Bakun (Late Fars Phase), there was a sedentarisation of most of the tribal elite and a number of rank and files that contributed to the volume of the settled population during the Lapui or what he refers to as the proto-Banesh phase (Alizadeh 2006). If this is actually the case, then it has major implications for our understanding of the rise of socio-economic complexity in highland southwestern Iran, but these arguments do need to be demonstrated through new excavations.

[13] These wares represent a marked departure from the buff wares of the Bakun period, which is demonstrated not only in the shift away from painted decoration, but also by the change in the selection of raw materials, away from high calcium alluvial clays towards medium-low calcium clays that frequently contain naturally occurring grit (Blackman 1989: 104-105).

[14] It is notable that this methodology results in the suggestion that there are an identical number of sites attributed to the Late Bakun (65 sites; Sumner 1994: Table 3) and the transitional Bakun/Lapui stages (65 sites; Sumner 1988b: Table 3). This is because the same criteria have been used to characterise each of the phases, whereas they should technically only be one stage, which will be referred to here as the Late Bakun-Lapui/Bakun stage.

[15] This was primarily based on the fact that the two characteristic wares were found together at Tall-i Bakun A (V), and that they co-occur at sites in other regions (Sumner 1988b: 29-30).

[16] This 1x2 m sounding was excavated in artificial levels by Alden over the course of four days in 1977 (Alden 2003a: 187-188, 195-196).

[17] He justified his attribution on the basis of the shallow depth of the pre-Banesh deposit, which appears to directly precede the Banesh occupation proper, and the observation that the red ware material recovered from the surface is clearly distinct from the typical Lapui assemblage as it is known from Tall-i Bakun AV and surface collections (Alden 2003a: 196; compare Alden 1979: Fig. 52 with Sumner 1988b: Figs. 2-3). Although this evidence is somewhat equivocal, Sumner relies on it in accepting that there is cultural continuity between the Lapui and Banesh periods (1988b: 30).

[18] Alden has proposed that this transition is contemporaneous with the Susa II levels in Acropole I: 17 (Alden 1979: 60; Sumner 2003: 52-53).

[19] Sumner has proposed that Late Plain Ware is identical to the Djalabad ware identified by Vanden Berghe (1986: 4).

[20] For example, Sumner's initial type assemblage for the Late Plain Ware was collected from the surface adjacent to the excavations at the Fratadara Temple at Persepolis, which had been excavated by Herzfeld (Sumner 1986a: 3, Ill.1-2).

[21] Boucharlat has noted that although Sumner has suggested that the pre-Achaemenid Persians were the users of the Shogha and Teimuran wares (Sumner 1994a: 103-105), they were purportedly 'tent-dwelling nomads' (Sumner 1972: 268) who did not leave observable traces after c.900 BC. The lack of clear evidence for any continuity between those populations using Shogha and Teimuran pottery, and the Achaemenid populations who used Late Plain Ware suggests that we should question the suggestion that there was a link between the users of Shogha-Teimuran pottery and the early Persian inhabitants of the Kur River Basin (Boucharlat 2003: 263).

[22] Although Whitcomb's analysis of the material from Qasr-i Abu Nasr focuses on the Late Sasanian and Islamic material, he does note that Post-Achaemenid and Parthian ceramics were recovered from the site (Whitcomb 1985: 20-23).